



Castle Eden Dene

National Nature Reserve. *An Illustrated Guide*



working today
for nature tomorrow

Introduction

Castle Eden Dene is a very special place. Since 1757 the Dene has had just 3 owners. Each has left their mark reflecting the conventions of their day, each has built on the work of their predecessor and each in their own way has encouraged and enthused visitors to appreciate the landscape and wildlife that has been in their care.

For many years naturalists had visited the Dene and had sung its praises by recording all the strange, unusual and rare forms of plant and animal life which lived there, together with the common everyday things. There, for example, up until about 1930, grew one of our most beautiful wild flowers, the lady's slipper orchid, so beautiful that it has almost become extinct in Britain because of its attraction to plant collectors who not only picked its striking blooms but also dug it up by the roots to grow in their gardens and greenhouses. Still present is the Eden argus butterfly, which is a sub-species of the northern brown argus butterfly and is one of the rarest butterflies to be found in Britain.

The Dene is about 3½ miles long and is the largest of the valleys which run down to the coast between Sunderland and Hartlepool. It covers over 500 acres and varies in width from an eighth of a mile at its narrowest point to nearly half a mile at its widest. Generally speaking, the floor of the Dene is 200 feet below the level of the fields which run up to the woodland edge and, in this deep, steep-sided, east-west valley, great contrasts in climate occur, creating a wonderful variety of habitats for both animal and plant life.



The Burdon's Dene. Peterlee Development Corporation.

The Burdon Family

For roughly 250 years the Dene was in the ownership of the Burdon family who lived at the Castle at Castle Eden. They were very proud of their Dene and, by and large, kept it to themselves, using it to produce timber for their estate and as a source of game for the table.

About 1850 the Rev. John Burdon decided that the beauties of the Dene should be made available to a much wider circle of people and it was he who first allowed members of the

general public to visit the Dene, on payment of a small fee. Knowledge of the wonders of the Dene soon spread abroad, and it rapidly became one of the most popular places for visitors to the North East. Over a dozen miles of footpath were available for walkers, others viewed the Dene from the comfort of decorated carts and other horse-drawn vehicles, whilst, at the seaward end, the house which then stood at Deneholme provided light refreshments.

Sadly, at the turn of the century, this popularity started to wane. Less and



Walkers in Castle Eden Dene. English Nature.

less visitors came to the Dene and, with a lessening of maintenance, the network of footpaths started to go into decay until, by 1950, only the main forest road from Castle Eden to the coast road at Horden was in a reasonable state of repair.

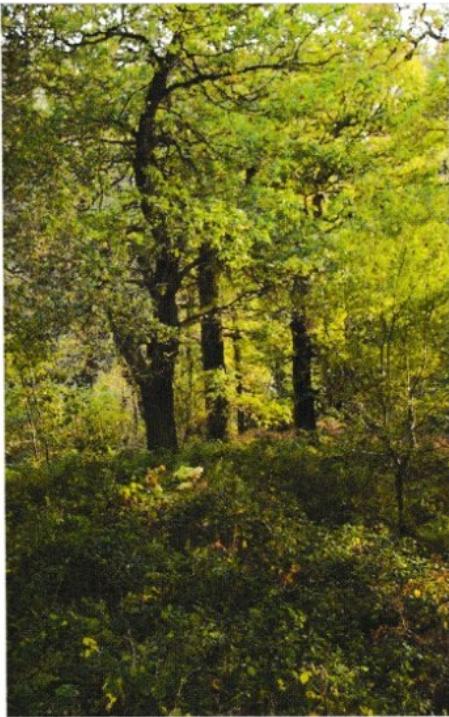
Peterlee Development Corporation

In 1951 the Dene passed into the hands of Peterlee Development Corporation, a body set up to create the New Town of Peterlee. Because of its well-known biological interest it was imperative that its new owners should do all they could to preserve the Dene in as natural a state as possible and, therefore, designation as a Local Nature Reserve came in 1954, the third such area to be so treated. For a further 16 years the Dene was left more or less untouched but, in 1969, the Development Corporation set up a Scientific Advisory Committee whose brief was to make the best use possible of the area. This committee, made up of botanists, zoologists and geographers from nearby Universities together

with representatives from the Nature Conservancy and the Corporation, set about drawing up a plan for managing the Dene as a Nature Reserve.

A survey of the whole area of the Dene was carried out, recording the trees, shrubs and other plants of the area. Also surveyed were the old footpaths which the Burdons had built, and the effects that had been made by people who now lived where once only fields had been. From these enquiries it became obvious that the Dene could fulfil a number of commitments in its new role. It could provide quiet relaxation for visitors who chose to walk its traffic-free paths; it could be made use of by schools round about who wished to teach their children something of the countryside by taking them and letting them experience some of its plants and animals; it could be used by institutions of higher education as a site for research into various forms of plant and animal life and, finally, it could provide a refuge for rare and delicate plants and animals which were threatened by various factors.

The woodlands were found to be in need of considerable work if the potential of the Dene as a place of biological interest was to be realised and, in this respect, work was to be undertaken to control those exotic plant which were taking over increasingly large areas of the Dene, sycamore and rhododendron being the species causing most concern.



Mixed aged woodland. English Nature.

The implementation of this plan of management was the responsibility of the Castle Eden Dene Joint Management Committee, which was made up of elected members and officers of the four bodies which control the local nature reserve – Durham County Council, Easington District Council, Peterlee Town Council and Peterlee Development Corporation – and it was this body which formally accepted the Scientific Advisory Committee's recommendations and thus put the plan into operation.

The re-development of the footpaths at an early stage was obviously necessary, not only to cater for people wishing to walk through the Dene but also to provide access to various parts

of the woodland in order that necessary work could be carried out. It is intended that, when completed, all footpaths will be of a standard suitable for pushchair traffic.

The re-structuring of the woodlands, on the other hand, is a long-term programme, not only because of the amount of work involved but also in order that the ages of trees in the areas of new growth should be as diverse as possible, thus enhancing the biological potential of the Dene as a whole. The interest and value of dead and decaying wood has not been overlooked and, wherever possible, fallen material is left to lie. This, of course, does not apply to trees which are felled in the course of working the woodland, these are removed entirely, the overall aim being to bring about a natural balance between living and dead material.

The footpaths now present in the Dene follow, with a few exceptions, the routes originally opened up by the Burdon family. Regrettably, most of them are nameless, Castle Bank, Beech Grove Road, Craggy Bank and Miss Mary's Walk being the exceptions. Castle Bank, as its name implies, leads down the bank to the Castle; Miss Mary's Walk is reported to have been the favourite walk of a daughter of the family. The first half of the 20th Century was a period of decline and decay for the footpath network, and it was not until management works on a full-time basis commenced in 1971 that a start



Garden of Eden Bridge. English Nature.

was made in repairing them. By that time natural processes had taken their toll of the paths, not only had they become choked by vegetation, they had also been swept away in some places and smothered in others by movements of both soil and rock. Whilst many of the paths were put back into good order by the regular staff of the Dene, a great deal of valuable work to this end was also done by voluntary labour, particularly volunteers from the locally based Tyne Tees Conservation Volunteers and the London based National Conservation Corps (known today as the British Trust for Conservation Volunteers – BTCV).

Some new paths were created, either to take the place of the old paths destroyed by landslides, or to create 'round walks', or to re-route original footpaths which, because of changes

in land ownership, were causing visitors to go out of the Dene onto adjacent land such as the Golf Course and farmland.

English Nature

English Nature took over the ownership and management of the Dene in 1985 and immediately designated it a National Nature Reserve (NNR). George Peterken a leading woodland expert said at the time "there are few clearer cases for an NNR woodland". The main objectives for the site remained unchanged under the new owners, to safeguard and enhance the woodland habitat whilst providing opportunities for the visitor to enjoy the Dene and its wildlife. The first objective is achieved through well established management techniques. Non-native species such as sycamore

and rhododendron continue to be removed to allow room for the native species, oak, ash, elm and yew. English Nature is seeking to address the second objective through involving the local community as much as possible in the running of the National Nature Reserve, this is achieved through volunteering opportunities, the education programme and wildlife events.

Along with the woodland English Nature also acquired Oakerside Dene Lodge, the reserve base and classroom facility. Prior to this the estate staff had been based at the Castle. The Lodge has been the focus for all community involvement. Having the Peterlee conurbation close to hand has provided an ideal opportunity to develop the active Voluntary Warden network. Volunteers bring with them a wealth of knowledge and experience while at the same time learning new skills and gaining the benefit of healthy outdoor activity. The ways in which we involve people are many and varied from practical estate work, leading guided walks, helping out at wildlife events to scientific surveys. For younger people there is the Dene Team, an environmental youth club which carries out practical tasks and learns about the environment in a fun way.

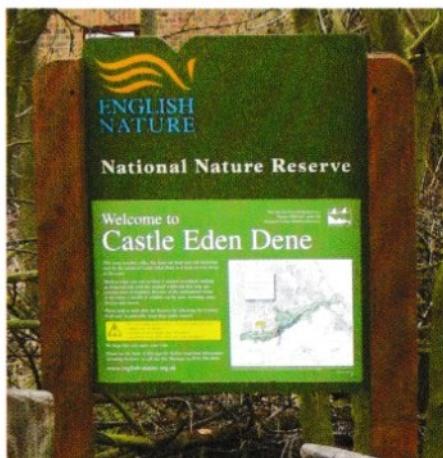
A wildlife event programme runs throughout the year introducing people to activities ranging from countryside crafts through wildlife gardening to bat watching. Many

people keep up to date with wildlife news and management issues on the Reserve through our newsletter the 'Dene News'. Local schools are catered for through our education programme which offers environmental education linked to National Curriculum topics.

In order to carry out this range of activities English Nature has recruited specialist staff for education and community involvement. The importance of this work has been recognised and many of English Nature's other sites are now employing people with these skills to fulfil the People and Wildlife programme.

National Nature Reserves are often seen as islands or havens for wildlife, at Castle Eden Dene there is great scope to work with neighbours to become more environmentally aware thus extending the influence of the Dene into Peterlee.

NNR entrance sign. English Nature.



Geology

Castle Eden Dene is the largest of eight very deep valleys, or denes, which cut spectacularly into the gently rolling countryside of eastern County Durham and run to the North Sea coast. Because of the comparative inaccessibility of the steep, in places vertical, wooded valley sides, the denes have escaped clearance for agriculture, leaving them as precious remnants of semi-natural ancient woodland. The combination of topography and the unusual soils formed on the Magnesian Limestone bed-rock, have created within these valleys, a variety of habitats in which occurs a remarkable range of plants, trees, insects and other wildlife.

Castle Eden Dene is Britain's largest and best preserved gorge woodland on Magnesian Limestone and is protected as a National Nature Reserve.

Like all landscape features, the denes are a reflection of the underlying rocks and the events which, over many millions of years of earth history have shaped them and given us the landscape we see today. Within the Durham denes, including Castle Eden Dene, can be found evidence of these past events. It is an exiting story which can be traced back more than 300 million years and recalls

tropical seas, moving continents and half kilometre-thick sheets of ice. We will see some of the evidence for this on the geology trail.

For a fuller introduction to the Dene's geology it is worth taking a few minutes to look at the touch screen displays at the Visitor Centre at Oakerside Dene Lodge.

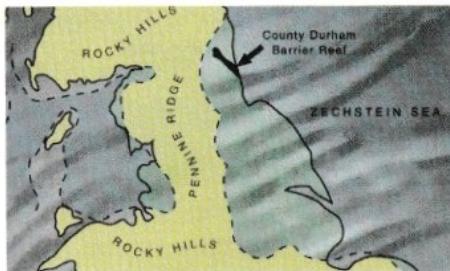
During a period of severe global cooling, which began about 2.5 million years ago, the polar ice caps extended southward across much of northern Europe, including Britain. At times Castle Eden was covered by at least half a kilometre of ice. The most recent ice covering dates from about 18,000 years ago. Debris, consisting of clay, boulders, sand and gravel, transported by the slow-moving ice, was dumped beneath the ice sheets and alongside them as they melted. The final melting of this ice, about 10,000 years ago, released vast quantities of water which, as it drained away rapidly to the North Sea, carved out the denes of the Durham coast.

Castle Eden Dene cuts through the layers of debris deposited by the ice sheets, into the 'solid' rocks beneath.

These 'solid' rocks consist of Magnesian Limestone, a group of pale yellowish limestones rich in the mineral dolomite.

They formed as layers of lime-rich mud on the floor of a warm, shallow, tropical sea, known to geologists as the Zechstein Sea, about 290 million years ago, during the episode of earth history known as the Permian Period. At this time the area which was eventually to become Castle Eden lay a short distance north of the equator. Movement of the continental plates over millions of years has brought the area to its present position.

A feature of the Zechstein Sea was the presence, close to its coast, of a long barrier reef, composed not of corals, but mainly of skeletons of marine animals known as bryozoans, with many shells, some sea urchins, crinoids and rather rare corals. The reef today is conspicuous in the east Durham landscape as a series of prominent hills, including Tunstall and Humbledon Hills in Sunderland and Beacon Hill, near



Zechstein Sea 290 million years ago. Durham County Council.

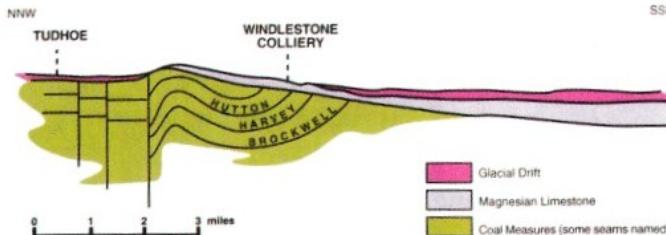
Easington. Castle Eden Dene cuts through the reef, the limestones of which are conspicuous, though rather inaccessible high in the rocky sides of the dene.

Standing in the woods at Castle Eden Dene today it is difficult to imagine that we are in the heart of a once important coalfield, yet at depths of between 100 and 250 metres beneath the dene several coal seams have been worked from the Carboniferous Coal Measures rocks concealed beneath the Magnesian Limestone.

In geological terms the Dene is an immature valley; that is, it is still being formed. This continuing growth of the Dene occurs as a result



Reconstruction of Permian landscape. John Watson.

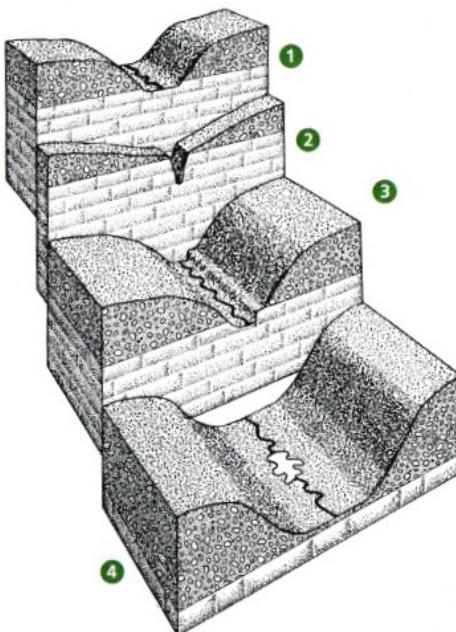


of various erosive processes, examples of which are easy to find. The erosive power of running water is easily seen in those places where the burn cuts into the base of a clay slope, eating it back until the slope collapses causing its face to slide or flow down. In a number of places signs of recent rock movement can also be found. Some of these movements are natural, others brought about by instability resulting from coal mining.

The main Dene is about three and a half miles long and varies in depth from about 100 to about 200 feet. It can be conveniently divided into four sections, each of a distinctive shape. From the A.19 embankment to Trossachs it is cut mainly into boulder clay, the sides moderately steep, some flat areas in the bottom through which the burn meanders and very few exposures of limestone. Between Trossachs and Gunner's Pool is a ravine formed by a major fault in the limestone, very narrow and about 100 feet deep, above which gentle clay slopes rise to the valley's edge. From Gunner's Pool to Garden of

Eden the ravine widens between limestone cliffs topped by boulder clay slopes, whilst from the Garden of Eden to the sea, cliffs are seldom found, the clay slopes are generally steep and flat areas in the valley floor re-occur.

Geomorphic sections of the Dene.



1. From the A19 to the Trossachs
2. From the Trossachs to Gunner's Pool
3. From Gunner's Pool to the Garden of Eden
4. From the Garden of Eden to Denemouth

Soils

The soils which cover the Dene are based on various boulder clays which form the valley sides. For the main part they are alkaline and are of four basic types. The upper gently sloping clay slopes, which are typically cloaked with oak woodland, are the exception to the general rule as they tend to be fairly acidic, whilst the steeper sloping oakwood areas are much less so. Where pieces of limestone from exposed rock have become incorporated a different type of soil develops, often of considerable depth, containing limestone fragments and, therefore, of a very alkaline nature.

The flat areas of the valley floor are made up from material recently deposited by the burn and are normally neutral and very variable in texture, ranging from silty sands to coarse gravels.

Lastly, under the plantations of coniferous trees very acid soils develop as the falling needles become incorporated into the normally slightly alkaline material.



Oak woodland. English Nature.

Climate

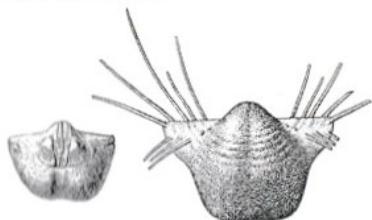
The coastal area of County Durham has a low rainfall, the average being about 25" per year, due, in part to the 'rain shadow' effect of the Pennines. On the whole spring tends to be a dry season, with high rainfall often occurring in early autumn and again in winter. The number of wet days is generally less than 10 per month.

Due to the frequent occurrence of 'haar' or sea fret in spring and early summer, which is often accompanied by light drizzle, the spring rise in temperature is delayed and low average temperatures are recorded in the early summer, particularly in May and June. The 'haar' also has the effect of reducing the number of sunshine hours during the summer months. Great differences in temperature, humidity and the light are noticeable between the eastern and western extremities of the Dene, the 'haar' sometimes extending the whole length of the valley whilst, on other occasions only the seaward end is affected.

The shape of the Dene leaves it particularly exposed to winds from both west and east. Again because of its shape the Dene contains a great number of areas which can be described as frost hollows or pockets, where cold air gathers, leading to periods of continuous frost in many parts of the valley floor in winter whilst the upper slopes are frost free during daytime.

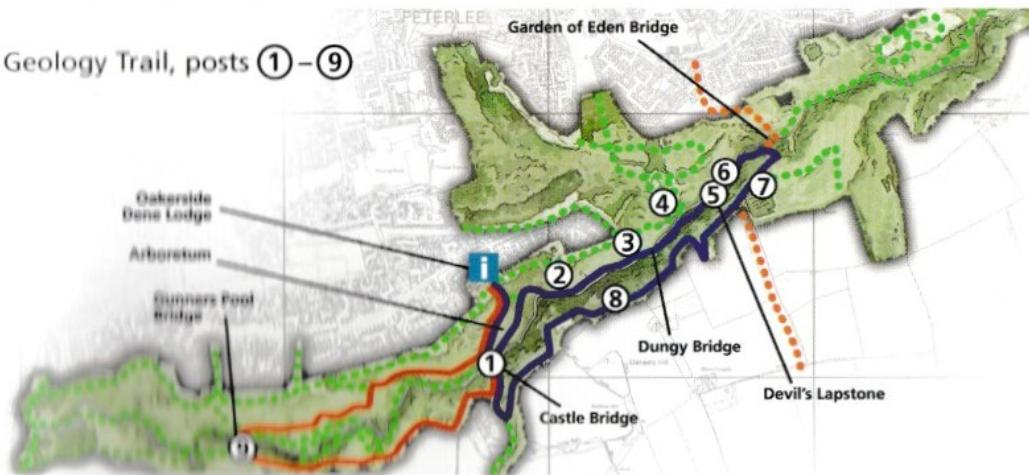
Geology Trail

This walk will introduce you to some of the many interesting geological features which can be seen in Castle Eden Dene between Gunners Pool Bridge and Garden of Eden Bridge. A very distinctive fossil brachiopod shell known as *Horridonia horrida*, which is locally common within the Magnesian Limestone reef, is used here as a waymarker to locate stops of geological interest along the paths through the Dene.



Above: *Horridonia horrida*, J. Sowerby
Below: Map of Geology Trail. Imagemakers

Geology Trail, posts ① – ⑨



From whichever direction you have travelled to Castle Eden Dene you will have crossed gently undulating country typical of much of eastern County Durham. This landscape owes its character to spreads of glacial debris, consisting mainly of accumulations of boulder clay or sands and gravels, deposited during the last glacial period.

From the car park at Oakerside Dene Lodge, go through the kissing gate and follow the broad path downhill to Castle Bridge (**Marker Post 1**). As you walk into the Dene notice that you are suddenly descending into a steep-sided valley cut deep into this rolling landscape.

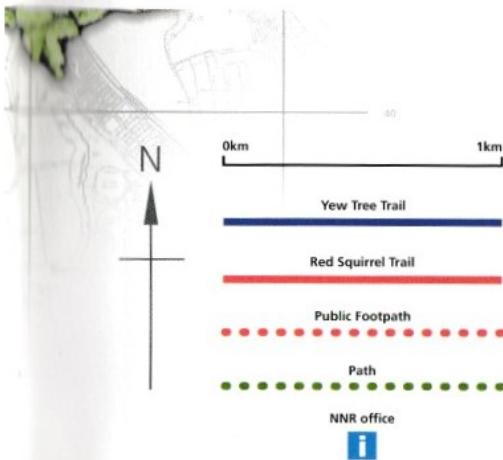
As you follow the tracks to the bottom of the Dene at Castle Bridge notice the rather uneven profile of the wooded slopes. The upper slopes are cut through boulder clay, a stiff brown clay with numerous scattered boulders, dumped by the last ice sheets. Water flowing through the glacial sands and gravels which lie beneath the boulder clay, lower down the slope, causes these deposits to become very unstable on the steep valley sides, resulting in extensive landslips. The rather uneven nature of the slopes here, and elsewhere in the Dene, is typical of such landslipped ground. Take the left turn at Castle Bridge to follow the track downstream.

Marker Post 2. The stream has here cut completely through the glacial deposits into the Magnesian Limestone beneath. Small cliffs on the south side of the stream show pale yellow dolomitic Magnesian

Limestone. Notice the crude horizontal bedding indicating the layers of lime-rich mud which accumulated on the floor of the Zechstein Sea almost 290 million years ago. Notice too numerous small cavities (up to about 10cm across) in the limestone. These indicate the original presence of small nodules of the minerals gypsum or anhydrite, formed in the very warm salty waters of the sea. These minerals dissolve very readily when exposed to weathering, leaving the cavities seen here.

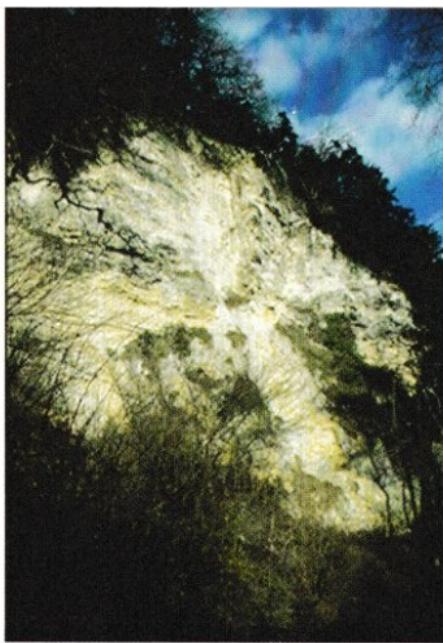


Cavities left by dissolved minerals. English Nature.



Marker Post 3. The sides of the Dene have closed in here to form a narrow gorge. From this point the north wall of the Dene forms a spectacular cliff rising above the trees. The lower parts of the cliff, mainly concealed by the vegetation, are bedded dolomitic limestones very similar to those seen at Marker Post 1.

These are overlain by massive white or pale cream dolomitic limestones which form part of the barrier reef. Fossil shells have been found in these



White Rock. English Nature.

rocks, though they are not accessible from any of the paths.

A large fault cuts the Dene at this point. Faults are fractures in the rocks along which the rocks have been displaced. This fault, known as the Blackhall Fault, runs roughly E-W across the Dene immediately beneath the high cliffs. Although the fault itself cannot be seen in the course of this walk, it was found in the coal workings beneath the Dene where it was found to displace the rocks up to 23m to the north. We will see another fault later in the walk at Gunners Pool Bridge.

Marker Post 4. A short diversion across the two footbridges leads into Blunts Dene, a branch of Castle Eden Dene. Evenly-bedded pale yellow dolomitic limestone forms small waterfalls beneath the footbridge over

Blunts Beck. Blunts Dene is notable for the extensive landslipping of its sides where water flowing through sands and gravels has caused the overlying boulder clay to slip. These sands in Castle Eden Dene commonly have a distinctive red colour. Freshly slipped sections through these are conspicuous high on the east side of Blunts Dene a short distance upstream from the footbridge.

Immediately beneath the footbridge, and for several metres downstream, the bed of the Castle Eden Burn contains numerous large boulders, mostly of a dark grey colour. These have weathered from the boulder clay at the top of the Dene. They are blocks of rock transported by the last ice sheets which covered the area about 18,000 years ago. The boulders are rocks from Northumberland and the Pennines. Most common are blocks of grey Carboniferous Limestone and darker grey blocks of dolerite from the Whin Sill.



Blunts Beck waterfall. English Nature.

Distinctive rocks such as these, which give clear evidence of the direction of ice flow, are known by geologists as 'glacial erratics'. In some places on the Durham coast 'erratic' blocks of Scandinavian rocks indicate ice movement across the North Sea.

Marker Post 5. The enormous block of rock, up to 12 m across, on the north side of the path is known as 'The Devil's Lapstone'. Although legend has it that the stone was dropped by the Devil, it is actually a very large block of reef limestone which has fallen from the steep sides of the dene.



Devil's lapstone. English Nature.

Marker Post 6. A few metres downstream two rather smaller blocks of limestone, known as 'The Kissing Frogs' lie on the south side of the path. Like the 'Devil's Lapstone' these are composed of reef limestone. Although the limestone has been rather altered over millions of years of geological time, traces of the outlines of shell fossils can sometimes be detected in these blocks. Please do not attempt to hammer these rocks or to collect from them.

Many very large blocks of exactly similar limestone cover the southern slopes of the Dene around the 'Kissing Frogs', though they are heavily overgrown by trees and are best seen in winter. All have fallen from the steep sides of the gorge.



The Kissing Frogs. English Nature.

Marker Post 7. Reef limestones with a few poorly preserved shell fossils can be seen in the sides of the footpath up Craggy Bank. From the top of the bank there are good views across the steeply wooded slopes of the Dene. Alluvial sediment deposited by the Castle Eden Burn forms a broad area of flat ground around Garden of Eden Bridge.

Garden of Eden Cottage. English Nature.





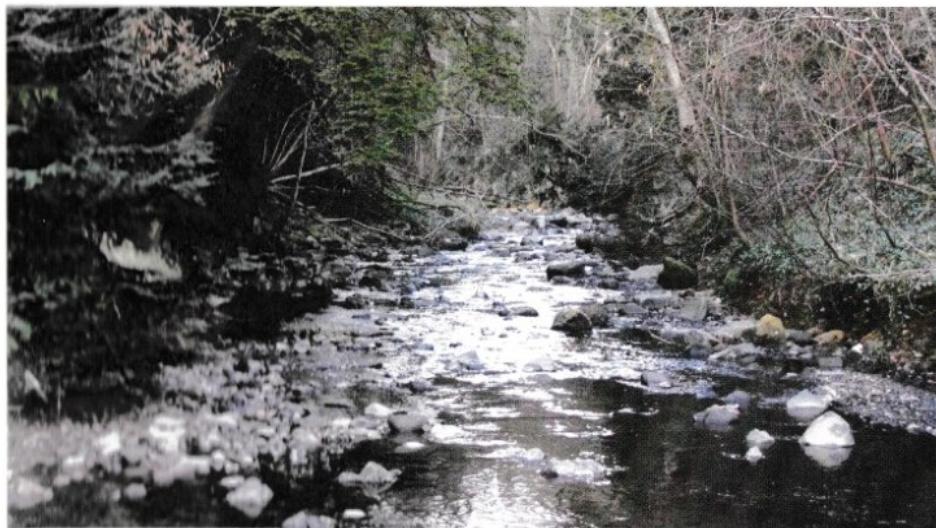
Gorge at Gunners Pool. English Nature.

The footpath, known as Miss Mary's Walk, along the south side of the Dene gives fine views across the deep wooded valley which contrasts with the rolling agricultural country immediately to the south.

Marker Post 8. A number of trees here lean over sharply as a result

of landslipping of the upper slopes of the Dene.

Marker Post 9. Gunners Pool Bridge crosses one of the most spectacular sections of Castle Eden Dene. The Castle Eden Burn here runs in an extremely narrow and deep gorge between walls of yellowish dolomitic limestone. The remarkably straight course of the stream follows a small fault adjacent to which the rocks have been displaced. Those on the south side have been displaced downward by several metres. The inclination of the plane of the fault is clearly seen in the steeply dipping northern wall of the gorge. The enormous earth forces which cause faulting typically result in shattering of the rocks closest to the fault. These broken rocks are particularly susceptible to erosion. The stream itself here follows this narrow belt of shattered rock.



Castle Eden Burn. English Nature.

Castle Eden Burn

The stream which flows through the bottom of the Dene is known as the Castle Eden Burn. It rises in Shotton Colliery and Wheatly Hill in two streams which join at Edderacles before entering the nature reserve under the A19 trunk road.

In the course of its passage through the Dene to the sea at Denemouth it drops through 350 feet, continuing the erosive processes which were started at the end of the Ice Ages which have formed the valley we find today. The bed of the burn varies, in some places it is made up of large pebbles and boulders, in others the water passes over large exposures of limestone. Water is usually continuous at least as far as 'Trossachs' but, from there eastward, there are many places where it disappears underground through fissures in the limestone. Water is also normally present in the streamlet which enters the Dene beside Castle Eden church, joining the main stream at Castle Bridge, and at Denemouth where a large pond occasionally forms behind a shingle bank thrown up by the action of the sea. When Shotton Colliery was a working pit (it closed in the 1960s) water entering the burn from there carried with it a great amount

of finely divided colliery waste, some of which was deposited along the course of the burn. Traces of these deposits can still be seen in the Dene, particularly at the eastern end of 'Trossachs' and along that part of the Dene from 'Gunners Pool' to Castle Bridge.

Much of the length of the burn was carefully maintained in earlier times, as can be seen from the remains of the built up banks in many places and, in others, pieces of large concrete structures such as those on the eastern side of Castle Bridge.

A number of springs are to be found in the Dene. The most extensive system of these is in Well Wood where water was obtained from five wells linked to a pipe which led the water down to the bottom of the Dene, across the burn, up the slope and eventually to the former Castle Eden brewery, where of course, it became Nimmo's Beer.

There were also three springs which served as domestic water supplies at Oakerside, the Castle and the Garden of Eden cottage.

Plants

The Dene is a rich botanical site containing not only the common plants of the woodland but also a number of less common species.

Many of the non-flowering plants are easily seen, especially in the lower, damper parts of the Dene. Mosses and liverworts so far discovered here total 142 species, 113 of which are mosses and 29 liverworts. Whilst these are plants which are easily overlooked by the non-specialist visitor, few people who walk

Hart's tongue fern. English Nature.



in the Dene in summer and autumn can fail to notice the large patches of the moisture loving giant horsetails. Equally noticeable is the hart's tongue fern growing in the humid confines of the bottom of the Dene, the thick leathery green fronds of which contrast so well with fallen snow. Many other members of the fern family can also be seen, particularly male fern, hard fern and bracken.

Over 300 different species of flowering plants are present in the Dene, many of them common and well known but others of particular interest because of their rarity. Within living memory one of our most beautiful flowers has gone – one of the last blooms of the lady's slipper orchid to be seen in the Dene was picked on Whit Monday, 1926 by a policeman who handed it to a young lady botanist for inclusion in a collection of flowers which her tutors required her to make as part of her studies.

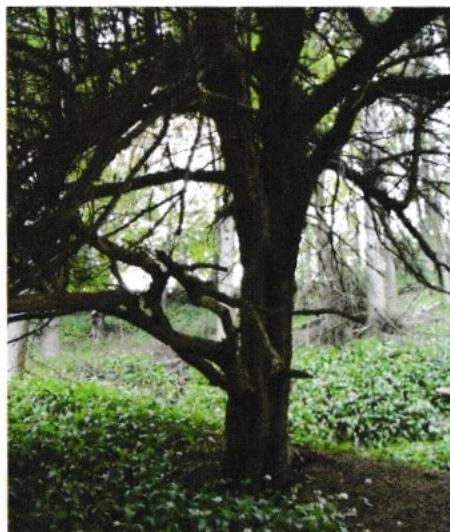
Trees and shrubs

Most of the Dene is woodland – oak, ash and elm, beech, sycamore and lime, with stands of conifers such as spruce, pine and larch. Scattered throughout are poplar, alder and birch, but, from almost any point in the

Dene, one species of tree can always be seen – the yew. Isolated specimens of this species can be found throughout the Dene but there are also some quite extensive areas, especially on the north facing slopes, where yew is the dominant tree with just the odd oak or ash standing up above the evergreen canopy.

The way in which the various forest trees are distributed throughout the Dene is to a large extent the result of the demands that have been made on the timber producing species by man's activities in and around the Dene in the course of years gone by. Oak will quite obviously have been in great demand for all sorts of domestic, agricultural and industrial purposes, added to which there is an account of a ship, suitably named the 'Castle Eden', which was built at Hartlepool from timber obtained in the Dene. It is highly probable that oak was also used as fuel for the two limekilns which at one time were in operation in the Dene. Despite these calls upon their valuable timber there are still many fine oaks standing in the Dene, particularly in the area between Gunner's Pool and the Garden of Eden.

The naturally dominant tree of the boulder clay denes of Durham is considered to be ash, and almost, as with the yew, it is hard to find a part of the Dene where one is out of sight of an ash tree. Like the oak, but, perhaps, not to the same extent, the ash will have been made use



Yew tree. English Nature.

of for a number of purposes by man living near the Dene, particularly in the construction of horse-drawn vehicles, as handles for the great variety of hand tools which were once in use, and in the construction of furniture.

Elm, too, grows well here, some trees rivalling our largest oaks in size and stature, and in early summer the paths underneath them are carpeted with their delicate disc-shaped seeds. Traditionally the source of timber for coffins, furniture, parts of horse-drawn vehicles and, occasionally, water pipes, the elms would almost certainly not have escaped being made some use of by the owners of the Dene. The Dene did not evade the ravages of Dutch elm disease in the 1970s-80s resulting in the loss of many of our elm trees. Today elm is still widespread throughout the



Lime tree. English Nature.

Dene but mostly exists as young trees or coppiced stools.

Beech is probably not a native tree of this part of England, it being generally thought to occur naturally only as far north as the south midlands. Nevertheless, the beeches which are here grow well and attain considerable size, their spreading limbs casting dense shade over quite considerable areas. Many are of similar age, appearing to have been planted about 1775, but there is a succession of younger trees spread more evenly through the Dene than the older ones which will take the place of those older trees as they die off. One very fine stand of beech has given a place name to one of the Dene paths – Beech Grove Road.

The commonest of the introduced trees in the Dene is the sycamore, a native of central and southern Europe. This was a very popular tree for planting as a producer of quickly grown, easily worked, timber from about 1500 onwards. There are no

records of when this species was first planted in the Dene, but it is probable that its introduction coincided with the development of 'The Factory' in Castle Eden Village, where firstly sailcloth and later corduroy were woven, and where, therefore, there was a high demand for bobbins and rollers. Sycamore grows almost without check and readily establishes itself in any vacant woodland space.

As with beech, there is a certain amount of doubt as to whether or not the lime tree is a native of this area. Specimens are scattered throughout the Dene and, when mature, attain considerable size, but there are very few signs of this tree being able to maintain its presence here by its natural means of regeneration. The large clusters of twigs which occur on the trunk of the lime tree are part of its normal pattern of development and provide shelter for a great variety of insects and other small animals.

Alder, a tree which prefers to grow in very damp situations, is scattered where conditions are suitable throughout the Dene, and grows to a considerable size. This is certainly a tree which is native to the area and is, perhaps, somewhat overlooked, although its very attractive cone-like seeds are very distinctive, as are the purple red catkins which appear on the trees early in spring. Whether or not the alders of the Dene were made use of in earlier times is not known, but they may have been, as traditionally their timber was

used for the soles of clogs and their bark in tanning processes.

There are a considerable number of birch trees in the Dene, their silver-white bark showing up clearly among the other trees. Birch, a short-lived tree when compared with oak and elm, manages, by means of its very small wind-borne seeds, to become established in almost any vacant woodland space and is so successful at doing so that it is most unlikely ever to have been planted deliberately in the Dene. As with alder, there are no records of its having been harvested from the Dene, but it is probable that it was cut as a source of fuel, and it may also have been made use of as a source of timber for turned items such as spools and bobbins, as well as a raw material for charcoal manufacture.

Two species of cherry trees can be found in the Dene, one large, one small. The tall trunks of the gean, or wild cherry, whose branches bear the long stemmed cherry blossoms, are found, in the main, scattered around the edges of the Dene, whilst the short, shrub-like bird cherry, of which there are only a few specimens, only grows in the damp, shaded confines of the bottom of the valley. Holly, too, is scattered throughout the wooded areas of the Dene, and, like the gean, prefers the upper areas of the valley where it mainly grows as solitary specimens but occasionally small groups occur. The annual demands made by man on this tree for countless years must have

influenced its distribution in the Dene. Mountain ash, or rowan, is similarly scattered through the wooded parts of the Dene, preferring, as does the holly, the upper parts of the valley slopes, but, in addition to those places, it also grows in the flat areas which can be found near the edges of the Dene. Pine, spruce and larch in the Dene are all planted, and in most cases in groups which are usually referred to as plantations.

All of these species produce 'softwood', quickly grown, easily worked timber of great use to man for a variety of purposes, and it was for that reason that they were introduced. Spruces can be found growing on flat areas of the Dene floor and other damp situations, larches on the better drained valley sides, and pines on upper, flat areas. Although these conifers are not natives of the Dene, they do have a considerable number of animals and plants living closely with them which provide additional variety to the area.



Hazel nuts. English Nature.

Hazel grows throughout the Dene, although it appears to prefer the northern, sun facing slopes to the southern, less sunny slopes where

its place tends to be taken by yew. The nuts of the hazel are keenly sought in autumn by both man and other animals, especially mice, voles, and squirrels who carry them for considerable distances before burying them in holes dug in the ground under the trees which contain their dreys.

The introduced rhododendron grows in patches throughout almost the whole of the wooded parts of the Dene. Planted as cover for game and, also, no doubt, for its large attractive flowers, it is very successful, and, as it has no natural enemies here, flourishes at the expense of native shrubs which are subject to attack from all their natural competitors. A number of species of rhododendron have been introduced into the Dene, but the one most commonly seen is the pale purple form '*ponticum*'.

Hawthorn can be found in most parts of the Dene. It has been used as a hedging plant for centuries and so not only is it found in parts of the current boundary but old established, sometimes solitary specimens still stand marking long forgotten hedgerows, often standing on a raised mound of earth. Here and there, hawthorns can be found which do not appear to have been part of any hedge but which have just sprung up from a seed dropped by some passing bird or mammal, but these seem to be almost lost among the common woodland species.



Layed hawthorn hedge. English Nature.

Closely related to hawthorn is blackthorn, or sloe, and this is a very common shrub in the seaward parts of the Dene. It is particularly attractive in early spring – its showy bunches of white flowers coming into full bloom well before the leaf buds burst. The name 'blackthorn' comes, of course, from the very dark bark of this member of the plum family.

Scattered throughout the wetter parts of the Dene are a number of species of willows whose catkins are so showy at about Easter-time. These range from the very short creeping willow on the sea-facing cliffs at Denemouth to the tall, tree-sized white willow which can be found in the central parts of the Dene.

Willow was the most commonly used shrub for basket making but it is not known if the willows of the Dene were ever put to this use.

Wild roses are found throughout the Dene, preferring the sides of paths and woodland roads to the deep shade under mature trees. In addition to the beauty and colour of both their

flowers and seeds, wild roses also suffer attack by minute wasps which cause the attractive 'Robin's pin cushion' galls to appear. Many different sorts of wild rose can be found in the Dene and are of particular interest to specialists in that field.

Raspberry and bramble both grow well here adding form, colour and flavour to the shrub layer. It is said that, in days gone by, the bramble patches which produced the biggest and most succulent blackberries were guarded by signs informing would-be pickers that they were not allowed to touch the fruit. Whether or not the same applied to the raspberries is not known – certainly, their present-day qualities would seem to merit it.

Gorse grows sparsely in the open parts of the Dene, but broom does not appear to occur here naturally, although it has been introduced into the edge of the tree belt along the side of the A19. Wild privet can also be found and so can guelder rose, a very showy shrub which bears large clusters of white flowers in summer followed by shining red poisonous fruits in autumn and winter. The red twigs of dogwood are also easily noticed in winter, contrasting sharply with the more sombre shrubs around them.

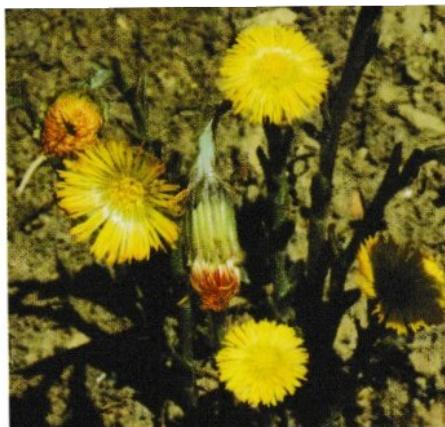
The spindle tree grows here, its simple greenish-white flowers followed in autumn by one of our most beautiful berries – pink cushion-



Gorse blossom. English Nature.

shaped fruits which split to reveal golden seeds. Spindle trees are not numerous in the Dene and prefer to grow in open or lightly shaded places in sharp contrast with the shade loving spurge laurel, a short evergreen shrub which blooms in very early spring, bears clusters of black fruits and seldom exceeds three feet in height.

Two climbing plants abound in the Dene, ivy and honeysuckle. Ivy can be found almost everywhere; climbing up trees, cascading down cliff faces and often scrambling over open ground, clearly demonstrating its ability to grow in any direction. Honeysuckle is perhaps not quite as common here as ivy, but, nevertheless, it can readily be found in summer by looking for its showy, fragrant flowers and in winter by its poisonous, shining red fruits.



Colt's foot. English Nature.

Flowers

The plants of the herb layer produce flowers in the Dene almost the whole year through, although, quite obviously, most blooms can be found in the summer months. It is impossible to describe here in detail all of the low growing flowering plants but it may be helpful to at least mention those which are most frequently seen, and the more interesting of those less readily noticed.

At about the turn of the year the flowers of winter heliotrope open. This plant, not a native of the Dene, came here from Italy by way of France where it was grown to provide its very pleasant fragrance when other flowers were not available. In the Dene it grows beside the path on the way in from Castle Eden church and is noticeable in summer by its leaves which cover the pathsides. Next to appear is winter aconite, another alien. This has crept down into the Dene from the churchyard at Castle Eden, where it flourishes. Snowdrops follow

shortly and are found in the vicinity of Castle Eden Church and around the Garden of Eden cottage which, at one time, was lived in by the gamekeepers who worked in the Dene. At about the same time, the flowers of butterbur appear beside the stream near the church, these are followed in summer by the massive leaves for which this plant is well known.

The early days of spring bring lesser celandine, the dandelion-like coltsfoot and the commonest, but most unnoticed of the woodland plants, dogs mercury, which provides a green back-cloth right through until the onset of wintry weather at the end of the year. Soon, great spreads of bluebells and wood anemones appear, dotted with primrose and false oxlips. As these reach their peak much of the Dene turns white under drifts of wild garlic flowers whose young leaves are edible but very strong flavoured whilst clusters of wild violets burst into flower beside the pathways and the pink flowers of herb Robert and red campion start to show.

In late spring, the nodding flowers of water avens – sometimes known as soldier's buttons – and the closely related wood avens – which is also referred to as herb Bennet – come into flower, the first, as its name suggests, growing in damp situations, the second preferring drier conditions. At this season of the year, too, the tiny golden saxifrage which covers the ground in the very damp, lime rich, shaded parts of the Dene comes

into flower, whilst, in open, sunny parts, the blue flowers of wood cranesbill and early purple orchids can be seen.

Once the trees have spread their new leaves very few plants come into flower in their shade, the most noticeable possibly being yellow pimpernel and foxglove. In open places, however, may flowers start to show. The yellow flowers of rock rose, creeping cinquefoil and birds-foot trefoil abound at both the seaward and the most inland parts of the Dene, added to which, on the sea-facing cliffs, are large, deep red flowers of bloody cranesbill. Also by the sea, on the flat, shingle, upper part of the beach, the pink and white restarrow comes into bloom.

Summer is also the time for tall stalks of hogweed, angelica and similar plants to carry their large umbrella-shaped heads of flowers, which are often smothered in various forms of insect life, and more insects will be found inside the blue flowers of the harebells. Purple flowers of knapweed alongside tall yellow hawkweeds, toadflax and yellow rattle are also easily seen, and are often visited by butterflies.

One of the last flowers to open, and one of the most spectacular in terms of size and colour, is the giant bellflower whose tall blue spike of flowers stands up above the brambles and grasses among which it prefers to grow. When these flowers have faded and their seeds ripened,

the flowering year has nearly turned full circle, although the odd red campion sometimes struggles on into the chill of December.

Of the rare plants of the Dene, mention has already been made of the lady's slipper orchid which no longer occurs here. A number of equally interesting plants do survive here although, because of the rarity, they are unlikely to be seen by the casual visitor. Bird's-nest orchid, a strange straw-coloured plant which has no green parts (an indication of its parasitic nature) can occasionally be found growing even in deep shade. Another unusual looking plant, herb Paris, which is a member of the lily family, grows in two places in the Dene, one of them right beside one of the most walked paths, the other well away from paths deep in the woodland, and, still with the same plant family, mention must be made

Woodanemone. English Nature.



of the lily of the valley, of which there are a number of patches spread through the Dene. Last, but by no means least, is wintergreen the small leaves of which are green in winter, the flowering spike which appears in summer bearing a number of very small, drooping, pinkish-white flowers.

Fungi

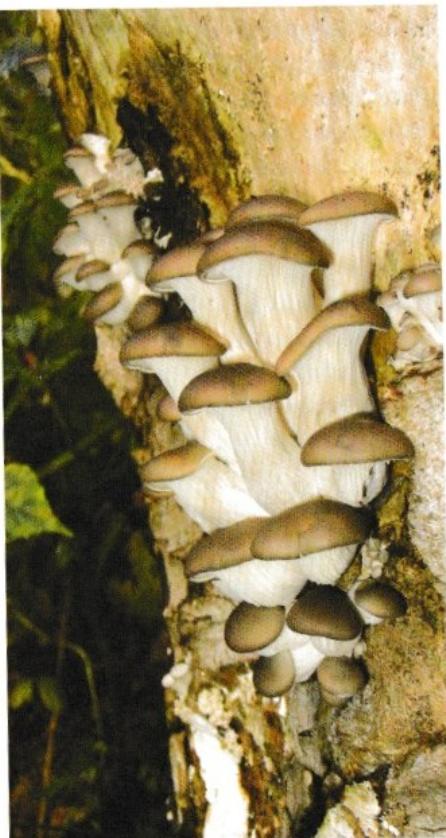
The account of the plant life of the Dene would be incomplete if some mention were not made of the fungi which can be found there. These are usually looked upon as the preserve of the botanical specialist, but their great variety of both colour and form cannot be missed by any passer-by. As with the flowering plants, the fungi are far too numerous to mention individually, but there are some which commonly occur which are easily seen and are of some interest.

Often met throughout the Dene is ear fungus, a brown, ear-shaped, jelly-like growth which is usually restricted to growing on elder bushes. Equally common is razor-strop fungus, also known as birch polypore, which, as its name implies, grows on birch trees in the form of a thick white bracket.

Another bracket fungus, Dryad's saddle, grows on fallen dead trees, its brownish-yellow fruiting bodies often attaining about a foot in width. Freshly fallen wood soon carries a crop of the pinkish, very tiny, coral spot fungus on its bark, whilst wood which has been lying on the

woodland floor for a rather long time can often be found to be the host of the strange black and white tiny clubs of candle snuff fungus. Generally, the fruiting bodies of fungi appear in autumn, but there are two species which occur in spring which can be seen and recognised, the common morel, a strange-looking fungus with a ridged cap usually found on old bonfire sites, and the very beautiful crimson elf cups which can be found growing on decaying wood under hazel bushes.

Oyster mushroom. English Nature.



Animals

Mammals

Roe deer are the only deer present in the woodland and are the largest of the Dene's mammals. They are not confined in any way and so are free to come and go as they wish, which makes it difficult to estimate the numbers present. Being shy, nervous animals, they keep themselves well hidden in thick vegetation for most of the day, but they are seen occasionally, especially by visitors who walk the Dene early in the day.

There is a healthy badger population in the Dene with a number of well established badger sets. The most the average visitor to the Dene is likely to see is newly dug soil outside a sett or a footprint on a muddy length of footpath but, for a considerable number of residents of Peterlee, the badger is a frequent visitor to gardens where it feeds on scraps which are either specially left out for that purpose or are obtained from rubbish bins.

To a large extent, the comments made on the badger also apply to the fox, but the foxes are less numerous. Because they are not so strictly nocturnal as badgers they are seen in daylight sometimes, particularly in early summer and the depths



Roe deer. English Nature.

of winter, but like badgers, they are not averse to taking scraps and tit-bits provided by humans.

Similar in colour to the fox, but much smaller, are the red squirrels which inhabit the Dene. Once again, population size is very difficult to estimate because of their habits, but many visitors to the Dene see them in the autumn, winter and early spring when there are less leaves to obscure the tree tops. They are also found feeding on the ground where they eat fallen seeds and fungi and where the cones of spruce trees are dismembered, these being too big and heavy to be dealt with aloft. Since the early 1990s we have also had the non-native grey squirrel in the Dene.



Pipistrelle bat. English Nature.

Since the arrival of the grey the red squirrel population has declined.

Both hares and rabbits are present in the Dene but in very low numbers. Hares are infrequently seen along the woodland edge, whilst rabbits are sometimes found deep in the bottom of the valley.

Equally difficult to see are weasels and stoats, both of which inhabit the Dene. Usually, the most that is ever seen of either of these animals is a very brief glimpse as they cross a footpath and that nearly always at high speed.

Moles disclose their presence by throwing up their characteristic mounds of excavated soil and these can be seen at suitable sites throughout the Dene. Less easily located are the much smaller mammals such as the short-tailed vole, wood mouse, and common, pygmy and water shrews but, with the exception of water shrew, which is scarce here, all occur commonly throughout the Dene.

Five species of bat have been recorded in Castle Eden Dene. The habitat is ideal for bats, the mature woodland contains many old trees that could provide roost sites and the sheltered nature of the Dene itself means that even on windy nights there are calmer areas for bats to feed. The insects that the bats need to eat are here in large numbers as diverse old woodland supports many types of insect and the presence of the burn also provides valuable feeding habitat.

Noctule bats are the largest bats present in the north east, they are the earliest bats to emerge, coming out at dusk, these bats fly high and can easily be confused with swifts. There are two species of pipistrelle in the Dene, common pipistrelle and soprano pipistrelle. These are our smallest bats; they emerge just as it is getting dark and feed on gnats and midges. These bats can be told in the air by their distinctive fluttering flight usually just above head height.

The Dene also supports Daubenton's bats and whiskered/Brandt's bats, these last bats are very closely related and can only be told apart on close examination. Daubenton's and whiskered/Brandt's bats can be seen later on, when it is almost dark. Daubenton's feed on insects taken from the surface of the water whilst whiskered/Brandt's feed about the same height as pipistrelle, often over or near to water.

Reptiles and Amphibians

Both the adder and the grass snake have been recorded from the Dene in the past but no sign has been seen of either in the past 30 or 40 years. The Newty is the largest pond on the Reserve and in that and one or two smaller ponds we have quite large populations of palmate newts, small numbers of the specially protected great crested newt and fewer still smooth newts. The damper areas of the woods invariably house both common frog and common toad. In one or two favoured habitats common lizards have been found, but these are not very numerous.



Common frog. English Nature.

Fish

Only one species of fish is found in the burn, the three-spined stickleback, which, when conditions are favourable, occurs throughout the length of the Dene, being most frequently found in the burn west of Trossachs.



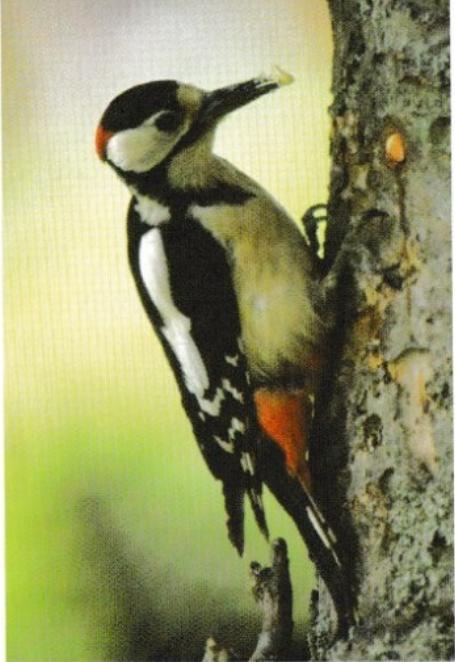
Tree creeper. English Nature.

Birds

Over seventy species of birds have been recorded in the Dene, which is not surprising in view of the wide range of habitats which it provides. The Dene cannot boast any particular rarities but, nevertheless, it does contain almost every species which could reasonably be expected to be found in its situation.

The resident birds of the Dene exceed 40 in number and, with few exceptions, are regularly and easily seen. Kestrels, with their characteristic hovering flight, breed deep in the Dene but prefer its edges for searching for their food.

Sparrowhawks on the other hand will hunt smaller birds even in the depths of the woods although they regularly patrol more open areas and even gardens. The eerie 'roding' call of woodcock is often heard on summer nights, whilst in winter the same birds explode almost from under the birdwatcher's feet. Redshank frequently visit the muddy area



Great spotted woodpecker. English Nature.

at Denemouth and are sometimes accompanied by Dunlin which also feed by wading. Ringed Plover may occasionally breed in the shingle in the same area. On any day of the year the loud clap made by the wings of wood pigeons can be heard, perhaps more frequently in winter when the Dene's moderately sized population is joined by passing vagrant flocks of birds from the continent, whilst on almost any night the screeching and hooting of tawny owls echoes across the valley.

The drumming of great spotted woodpeckers in spring is a typical sound of many woodland areas including the Dene, together with the croaking of crows, cawing of rooks and chattering of jackdaws. Occasional glimpses are to be had

of jays which disclose their presence with raucous calls. Far less noisy, but often equally hard to see, are the members of the tit family of which great, blue, coal, marsh and long-tailed occur here. Nuthatches, are reasonably common and can be both seen and heard in all of the well established areas of woodland. Treecreepers, also, are quite common in the stands of older trees.

Wrens occur everywhere, but are more often found where the shrub layer is dense, and from the safety of which they sing their distinctive song. Both song thrush and blackbird are common in the Dene, the song thrush preferring the woodland edge and cleared areas, whilst blackbirds are often found in the densest parts of the woodland.

When the burn carries a good supply of sticklebacks kingfishers can sometimes be seen, usually as vivid blue flashes passing along the watercourse. Robins, on the other hand, are always present and, as is usual, are quite prepared to allow themselves to be approached very closely. Often heard, but less easily seen, are goldcrests, their high pitched calls often betraying their activities high up in the coniferous trees.

Hedgerows and patches of dense shrubs are the places most favoured by dunnocks. Pied and grey wagtails are equally limited in their habitat, both preferring open places near water, the grey wagtail seldom being seen anywhere other than along the

course of the burn. Greenfinches, goldfinches, linnets and bullfinches tend, in the main, to be most readily found along the woodland edges, only the chaffinch, of all the family, being completely at home amongst the trees. Another hedgerow bird, the yellowhammer, is not common here, nor are reed buntings which prefer areas of scrub near water. Both house sparrow and tree sparrow were found on the Reserve at one time but due to loss of farmland and changing agricultural practice tree sparrows are no longer found here. Disturbingly house sparrows are also becoming more uncommon and are not encountered in such large flocks as in former times.

Winter visitors to the Dene may be fortunate enough to see waxwings, very colourful birds which move around in small flocks and feed, rather wastefully, on the seeds of hawthorns. Severe weather can also drive in fieldfares and redwings from the pastures they prefer to feed in and they join the other thrushes in feeding on the fruits of the yews. During the autumn and spring migrations, snow buntings can often be seen passing through the Denemouth area on their way from and to their breeding grounds.

Of all the birds which are found in the Dene in summer, the cuckoo must be the easiest to recognise by its song and the very distinctive shape of swifts, swallows and house martins leads to their easy identification. Whilst the last three are seen high

on the wing, the shaded, dense areas of old woodland sometimes contain redstarts. Passing visitors in summer include wheatears and pied flycatchers, neither of which nests here.

Grasshopper warblers, whose song is so like the sound made by the insect after which they are named, sometimes breed here, but more commonly found members of the warbler family include blackcap, garden and willow warbler and chiff-chaff, the latter the earliest of the summer migrants to arrive.

Insects

Any visitor who arrives in the Dene on a summer's day quickly comes to realise that insects are abundant here. So far, over 1,600 species have been recognised here, ranging in size from fleas to the 4 inch wing span of the poplar hawk moth.

Perhaps the best known of the Dene's insects is the Castle Eden argus butterfly, a form of the northern brown argus butterfly which has a very limited distribution in the British Isles. It is quite small, about 1" from

Northern brown argus. English Nature.





Large Skipper. Peter Wakely/English Nature 20624

wing tip to wing tip, the upper side of the wings dark brown with spots of orange along their edges, the underside light brown with white spots with dark brown centres, the edges again lined with orange. It lives on the colonies of rock rose which grow on the steep cliffs at the mouth of the Dene where it may be seen flying, often mixed with common blue butterflies, in July.

Less well known, but almost equally important, are three moths, the first British specimens of which were all found in the Dene. One of these, Blomers rivulet, a small greyish moth with orange-brown wing tips, was discovered by a Captain Blomer in 1831; another, the barred carpet, whose caterpillar feeds on moss, had been found six years earlier in 1825, and the third a tiny moth known as *Acrolepiopsis betulella* which has wings which span only half an inch.

Twenty species of butterfly are regularly found in the Dene. Of the white butterflies the orange tip is the most colourful and can be seen in all parts. Meadow brown and small heath, together with large skipper, are often found in open areas whilst high above the ground the red admiral may be glimpsed as it glides and flutters amongst the tree tops. Small tortoiseshells with their brightly coloured wings appear early and late in the year flying strongly along the woodland edges, paths and clearings. Because of their generally nocturnal habits the moths tend not to be seen by the general visitor. About 450 different species of moths inhabit the Dene some very colourful others almost nondescript in appearance.

A few species fly by day and so, in grassy places a warm day in summer will encourage the black and scarlet burnet moths to fly after they have emerged from the flimsy looking cocoons which they attach to the stems of grasses.

Other moths sometimes seen flying by daylight are the yellow shell, a mainly yellow moth with intricately patterned wings which occur in grassy places; the bordered white, a large black and white species which lives on pine trees; the silver ground carpet, a whitish moth with black patterning which is often seen at rest on the leaves of low vegetation where its markings cause it to resemble a bird's dropping and the magpie moth, which, as its name implies,



Green tiger beetle. English Nature.

is black and white spotted, its body being black and yellow banded, which occurs in large numbers on brambles.

The true flies, that is, insects with only one pair of wings, are numerous in the Dene, about 400 different species having been recorded. To the average visitor they will be of little interest other than as a minor irritation, but some species are worth mentioning as being of special interest. Hoverflies which hang motionless in the air, suddenly darting out of sight to hover elsewhere, can also be seen feeding on the flower heads of hogweed and angelica where their black and yellow striped bodies appear very wasp like. The largest of the true flies to be found in the Dene is a crane fly whose 2.5 inch wing span and very long legs make it almost unmistakeable.

Many of the beetles are quite large and colourful, a total of over 350 species having been found so far. Best known of the beetles are the ladybirds whose red or yellow and black spotted wing cases declare their presence in the most unexpected nooks and crannies, as well as on the aphid ridden plants which provide their prey.

The long red, or brown, soldier beetles are often to be seen in summer as they clamber about the flower heads of hogweed and similar plants. Blue-black ground beetles occur all through the Dene and sometimes dor beetles are found, often carrying a great number of parasitic mites which has given rise to an alternative name for this species, the 'lousy watchman'. The open vegetation at Denemouth is much favoured by a very colourful member of this



Bumble Bee on Flower. English Nature.

family, the tiger beetle which has metallic green wing cases spotted with bronze, a blue-green abdomen and metallic bronze legs.

Grasshoppers also prefer open, grassy places and these on a hot summer day can be heard 'singing' in considerable numbers. In similar situations, particularly near the burn, the common blue and red damsel flies are sometimes seen, occasionally being joined by one of our largest dragonflies, the southern hawker.

In June and July the stems of grasses and other low growing plants carry enormous quantities of 'cuckoo spit' – the frothy protective covering produced by the early stages of the frog hoppers. These are sap feeding insects as are the aphids usually referred to as 'green flies'. At the height of summer, the upper sides of the leaves of the sycamore trees become marked with a shining, sticky substance. This is honeydew which is produced by the innumerable

aphids to be found on the undersides of the same leaves.

Eight species of bumble bee have been found in the Dene and wild colonies of the honey bee are also usually present, as are many species of solitary bees. If the wild roses growing by the coast are examined their leaves will often be found to have circular holes cut at their margins – the work of the leaf cutting bees. Also on the roses may be found red, cotton wool like growths usually known as robins pin cushions and, on the leaves round swellings known as pea galls, both the result of attacks by small gall-causing wasps. A larger wasp to be looked for along the coast is the very brightly coloured ruby tailed wasp which, as its name implies, has a metallic red tail and blue-green body. The largest member of this group of insects which can be found in the Dene is the completely harmless, but very waspish looking, greater horntail, a saw fly with a fat black and yellow striped body, two-inch wing span and a saw tail, which looks very like a sting, by means of which its eggs are deposited deep inside the wood of coniferous trees.



Greater horntail. English Nature.

Man and the Dene

Since very early times man has lived near to the Dene, possibly from at least as early as 6,000 B.C. Worked flints, a material which does not occur here naturally, have been found at places along the coast between Ryhope and Hartlepool including Horden, and date from that period.

At the time of the Danish attacks on the north east coast, about 900 A.D., land in the east of the County of Durham was granted to a man who is variously known as Adfrid, Ealfrid or Tilleas, who was charged with defending it against the invaders. Some fifty years after that, the village of South Yoden, which is now known as Castle Eden, was separated from the land granted to Adfrid.

During the course of the next few centuries the land lying between Castle Eden Church and the Dene contained a small village consisting of a 'castle', which was probably a fortified manor house, some small houses and, by 1143 A.D., a chapel, which stood on the site of the present church. The houses, which made up the village, have now completely disappeared, only their buried foundations, linked by a buried cobbled path, remain today. Also gone now, except for some buried

foundations, is the 'castle', which was protected on its northern and eastern sides by the Dene and on its other two sides by a moat. Around the year 1500 the moat was filled in, by which time the village was possibly in a state of decay.

In 1757, Rowland Burdon, who was a member of the Company of Merchant Adventurers of Newcastle, bought the castle and lands at Castle Eden from William Bromley. The land was unenclosed, the chapel a ruin and hardly a trace remained of the manor house. The new owner quickly set about improving his new possession; the chapel was rebuilt by 1764, becoming the Church of St. James, and in 1765 a start was made on the building of what was to become the Burdon's family residence.

It was in 1775 that some workmen, who were working on a hedge some hundred or so yards north of the church, came across 'The Castle Eden Vase', a Rhenish claw beaker made in about the 6th Century, which appeared to have been used in a human burial. The vase is now in the British Museum, and Rowland Burdon's own account of its discovery is given in Elizabeth Burdon's book entitled 'Before my Time and Since'.

"This glass vase was found about the year 1775 at Castle Eden, in the County of Durham, in throwing down a hedge back about 100 yards north of the bridge leading to the Castle, and near where two ash trees now stand upon an eminence near the roadside. The mouth of the vase was applied to the skull of a human figure so near the surface as to leave the bottom of the vase exposed in the gutter of the hedge, which was mistaken by the labourer who found it for the bottom of a broken bottle. The body had lain horizontally east and west, the head towards the east, and had been covered with a heap of ordinary field stones. The labourer said that the skull and bones appeared entire, but he was ordered by the clergyman of the place to make no further search. I had the curiosity, however, on my return to Castle Eden soon after, to open the ground, where I found the heap of stones remaining with such a cavity as might be supposed to contain an ordinary body, and a quantity of deep-coloured soil, which I presumed to have been the ashes of the bones mouldered by the admission of the air. The vase was full of earth, and when emptied appeared to have a subtile aromatic smell.

*(signed) Rowland Burdon
November 6th, 1775."*

The Dene was not left out of the general improvements, which were being made to the estate and, by about 1790, the next Rowland Burdon had completed "opening out the



Saxon glass vase. English Nature.

picturesque Dene by constructing a road from just above the Castle to the sea. Thus the most magnificent of magnesian limestone glens which fringe the eastern coast of the County of Durham was rendered accessible through its whole length, revealing its wild beauties at every turn."

During the latter part of the 18th century a considerable growth of industry took place in Castle Eden village and, without doubt, the Dene was used as a source of both timber and lime for this development. The construction of a sailcloth factory, which opened in 1792, must have called for a considerable quantity of timber and it is probable that the two limekilns, which at one time operated in the Dene, dated from the same period.

Elizabeth Burdon, who wrote her memoirs in 1922, provides the next date in the Dene's history:

"In the first decade of the 19th century two French Abbes (refugees) found a 'peid a terre' in the Dene at Castle Eden. They built themselves a small two-roomed stone cottage, just at the last bend, when you reach level ground before coming to the sea on the right, and lived there for quite a long time, subsisting on what they were able to fish, snare and beg, and the produce of their small garden. Eventually, when the political horizon cleared, they returned to their own country. When I first remember the place, the walls were still standing, and even now some traces remain. It must have been a lonely spot in those days before coal pits came near, within sound of the cold North Sea and three miles from any village."

By the 1820's the Dene had already become a tourist attraction as the following story, written by Elizabeth Burdon's father, John Burdon, illustrates; although it seems that the Dene road still left something to be desired:

"In my younger days a party of servants from the Rectory at Easington came over to see the Dene at Castle Eden. Among them was a little dwarf, very much deformed, with a hunch back, a protégée of Lady Ravensworth's. They had a cart with them, and coming up the very steep little pitch above the culvert where

the great silver firs stood just under the Castle, the horse jibbed. All jumped out except the dwarf, who was helpless in such an emergency. The cart, with her in it, backed over the side of the road down into the channel of the little stream. But, though it was a tremendously steep decent, neither were any the worse. Of course, there was a fearful screaming, which soon brought the butler down from the Castle, to see what had happened. I followed shortly after, and when I arrived on the scene I found the butler with the dwarf in his arms, she screaming most vociferously, and his face the picture of horror. He had picked her up out of the watercourse, and, not knowing she was a misshapen dwarf, concluded that she had been doubled up into this higgledy-piggledy form by the injuries she had sustained. I called out to the butler, 'Is she hurt?' 'Hurt' he exclaimed, holding the poor little creature out at arm's length, 'why, look at her!' 'I don't believe she is hurt one bit,' I replied; 'she is always like that; she is only frightened,' – and I was right. I believe that Lady Ravensworth had picked up the little creature in the streets of London out of pity, and gave her a home at Ravensworth."

A further use of timber grown in the Dene was established in 1835 when two men, Thomas Richardson and John Parkin, set up business as shipbuilders in Hartlepool.

Trees felled in the Dene were converted into the raw materials for wooden vessels, which were built in pieces near the sea and then assembled at the water's edge. Needless to say, the first such ship was named 'Castle Eden'.

John Burdon's contribution to the Dene was the opening up of many fresh paths, especially in the spectacular western part. Once again, Elizabeth Burdon provides some interesting details:

"The upper part (the Gunnerspool end) and Jacob's Ladder had been allowed to grow up quite wild, and the deep chasm, or 'canon', formed by the burn above the pool was almost inaccessible. He therefore designed and threw over a footbridge, which gave easy access to the place. This was made in pieces in Hartlepool, put together on the ground, and then pulled across into position by chains and ropes. It had been a long promise that his friend, Mr. Edward Boyd of Moor House, should be invited to be present at the opening ceremony. Accordingly, on the morning (it was towards the middle of June 1877), when the framework of the bridge was thrown across, my father writes:

'A party were assembled to witness the completion of this bit of engineering work, and among others Mr. Boyd. The planking on the bridge at that time was not laid, and the bridge could only be crossed by

stepping along its iron framework. There was no danger in this whatever, if only due caution was observed (if you had a fairly good head, be it understood), and I and others had passed repeatedly. The workmen had just commenced laying planks transversely, that the men who were carrying red-hot rivets might serve them more quickly. One plank only had been laid when Mr. Boyd turned to my daughter and said, "Have you a mind to go across, Miss Burdon?" But she thanked him and declined, such like gymnastic performances not being in her line, as she said. Mrs. Hildyard similarly declined. Mr. Boyd then, with a stick in one hand and the other in his pocket, was proceeding to cross. He carelessly stepped on the point of the plank, and it tilted. He instantly dropped his stick, but before he could grasp any of the iron bars he had fallen almost through the opening. One shoulder was dislocated in the attempt to arrest his fall but he still held on by the other hand. I was at the moment talking to Mrs. Hildyard, with my back to the bridge on the north side, when suddenly she turned deadly pale, and, on looking round to see the cause, I perceived a man's arm holding onto the framework of the bridge. The body was not visible. In a moment, I was at his side and held him up. The workmen were all on the other side of the bridge, but two or three of them came across almost immediately, and took my place in supporting Mr. Boyd, and quickly carried him in safety to the side.

But for their assistance, I much doubt whether I could have lifted him single-handed. He had a marvellous escape, and I believe did not recover from the shock for a good many months.'

"My own personal recollection of the above was the eternity it seemed before the men came to the rescue, and one expected every moment to see my father (one foot on one side, the other on the other, holding on to nothing but Mr. Boyd's coat collar) leave hold and that both would fall through. We all behaved beautifully, as a matter of fact, till the critical moment was over – dead silence prevailed. Mr. Boyd fainted, and had to be brought round with stimulants. Someone was sent in hot haste for the pony carriage, but I do not remember to this day how they got him anywhere near the only point approachable by wheels. Then the company moved off; as we did so, Rowland's spaniel took upon himself to try and cross the bridge in his turn. On seeing which, Mrs. Rowland (Aunt) Burdon gave vent to the most unearthly scream. The dog was whistled back, and nothing happened; but it relieved the tension. Mr. Boyd was laid up for a fortnight in bed at the Castle, and looked most picturesque in a red nightcap with a white tassel. His daughter had to be sent for to nurse him. He was nearly 70 at the time."

Ten years later, in 1887, another burial was discovered, and again it is Elizabeth Burdon who tells the story:

"It was somewhere about this time that in making excavations for gravel on the near side of the Dene, above Beech Grove, the workmen at Castle Eden came upon some human bones in a sort of pocket of gravel, about three feet below the surface. They must have been there a long time, several hundred years; only the larger ones and skull were remaining, the smaller ones had disappeared. My father had them brought up to the house in a basket, and for quite a long time – several years – they reposed behind the wooden screen in the billiard room in a cupboard. They used to be produced and shown to any guests or visitors interested in that sort of thing. At last, I took compassion on the poor bones, and one day, when there was going to be funeral, I carried them up to the churchyard and dropped them into the open grave; so they got a decent burial at last, poor things. My father did not really mind, and it distressed me to think of their never having any rest. The presumption was, of course, that the man, whoever he was, had been murdered and poked away out of sight, as the bones were quite close to the surface when found."

The largest structure in the Dene is the railway viaduct with its ten arches, each spanning 60 feet. A special brick-field had to be opened to produce the bricks from which it was built and a temporary cable railway, 800 feet in length, crossed the Dene during construction.

The viaduct came into use in 1905 and, besides carrying rail traffic, was also used by pedestrians, for whom a wooden footway was provided, fixed to the seaward side, which, it is said also carried the occasional horseman.

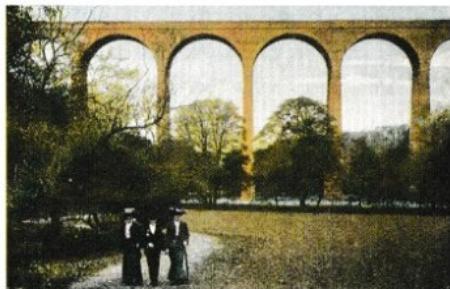
This precarious means of getting from Blackhall to Horden, avoiding going down and up the Dene's steep slopes, continued in use at least until the coastal road was built in 1926. The embankment upon which the road was built entirely fills the Dene and divides off the Denemouth area from the rest of the valley.

From about this time onwards, the Dene lost some of its attraction for visitors who had flocked there in great numbers around the turn of the century. In its heyday, a certain

Dr. Granville wrote the following description of the Dene:

"A poet, and a poet only, can do justice to the many varied beauties of this enchanted region. The brilliant tone and robust pencil of Stanfield might seize and portray some of its truly magnificent pictorial features, which appear, as it were, purposely arranged for the artist, in some of the happiest and incessantly varying combinations of rocks that seem split asunder by some geological catastrophe, and hanging woods which, in many places, actually darken the face of the sun, and serve to perpetuate night."

"A winding and safe road, throughout the whole extent of this defile, serves admirably the purpose of displaying its endless beauties to the many hundred visitors who, during the summer, are admitted by the liberal proprietor to the enjoyment of this magnificent region, containing some of the finest scenery in Durham County. Seen from the upper part of the Dene, not far from where a stream of water springs from a crevice of rock, and, forming a natural cascade, falls into the Gunner's Pool, the road can be traced to a considerable distance through the valley below. Snake-like, and in broad coils, it rushes down the deep sides towards the bottom of the dell, which is too much steeped in gloom to reveal its own secrets. Here and there the road is seen for a moment to right itself upon a level in the shape of a platform, or to wind round a steep



Denemouth viaduct 1920's (top), and 1970's. English Nature.

bank covered with trees and brushwood; but it soon again takes a downward course, and proceeds to its destination."

"Caves, gloomy and unfathomable; masses of rock, detached and rolled down precipices – among which a stream of water frets and murmurs – and trees of every species that place themselves in the soil of Great Britain – such are some of the features that strike the attention of the visitor, who in general prefers approaching the Dene, and exploring it, from the lowest or seashore entrance. Gay vehicles, filled with such visitors, are seen almost constantly ascending from below; and many did I behold on that day, from a circular terrace that overlooks a hanging wood, and heard them trying their prolonged halloos, to provoke an echo which faintly answered to their calls. Gipsy parties are spread among the steep and grassy slopes, seeking for a spot where to display their picnic baskets. They gaze upwards at the azure of the sky which they can only behold through the various clumps of trees that hang over them, forming a refreshing canopy to their repast."

Sunday school outings and similar holiday pursuits took place in the Dene, particularly at Denemouth, and in 1926 it was still possible for visitors to call at one of the three cottages which then stood in the Dene and purchase a tea of new brown bread, butter and eggs for 1 shilling and 3 pence.

The growth of the coastal collieries with their attendant pollution, coupled with a change in the fortunes of the Burdons, saw a great reduction in the number of people visiting the Dene. Maintenance of the footpaths became an increasing problem and they started to fall into decay and disuse so that, by 1951, when the New Town of Peterlee was established along the northern edge of the Dene, only the original road from the Castle to the sea remained of what had been about 12 miles of footpath.

In 1954, the Dene was designated a Local Nature Reserve but financial constraints were such that it was not until 1971 that a start was made on re-opening the old footpaths along which the general public once more started to make their way.

Before it became a Nature Reserve, the Dene had, for centuries, provided timber and game for the estate and recreational space for people at large on payment of a small fee. Having passed into public ownership the accent has been on doing as much as possible to restore the Dene to its natural condition in order to enhance its richness and variety.



The Castle. English Nature.

Folklore



The grotto in Castle Eden Dean [Dene]. T Allom.

The origins of the names given to two of the more unusual features in the Dene, Gunner's Pool and the Devil's Lapstone are part of the folklore of the district and, as might be expected, more than one version exists of the fables associated with them. In Murray's "Handbook for Travellers in Durham" which was published in 1873, the following account is given:-

Gunner's Pool and the Devil's Lapstone

"At the upper end of the Dene the finest of these precipices overhangs a chasm, where the stream which dashes through it has formed a deep blue pellucid pool in a basin of the rock known as GUNNER'S POOL, from one Gunner, who was drowned there long ago. Some broken rocks near this, in the middle of the burn, gave rise to the tradition that the Devil, who was assisting in the building of Durham Cathedral,

fetched stones from hence, and that when he was crossing here his apronstrings broke, and the stones which contained falling out, remain in the burn to this day".

In "Legend and Superstitions of the County of Durham" we are told:-

"A legend connected with a large stone in Castle Eden Dene, reveals the fact that the devil is not above wearing aprons. His Satanic Majesty was, it seems, on one occasion flying over the Dene with this immense stone in his apron, when, sad to relate, the apron string broke, and the weighty burden was precipitated to the place where it now lies".

Elizabeth Burdon has a rather different explanation:-

"I suppose that the legends attached to the Dene at Castle Eden belong by rights to the earlier part of this History. They always had a fearful attraction for me in early years and when I was taken for walks near Gunnerspool by my old Aunt Mary Burdon, who was generally equipped with a tremendous pair of boots and armed with a sort of hooked spud for nettles, I remember keeping very close, and taking good care to WALK IN FRONT, when we were anywhere near "Black Bogey Hole".

The authentic story is this:-

A long, long time ago, when the idea was first entertained of building a Cathedral at Durham, a man of the name of Gunner made a compact

with the Devil to supply the stone. The bargain was that Gunner was to walk up from the sea shore at the mouth of the Dene, the Devil following and picking up all the stones by the way, which he was to deposit in his apron, Gunner was not to look back; if he did, the compact was broken. Things went very well till Gunner reached the place now called Gunnerspool, when he heard a tremendous roaring of the sea behind him, as if the waves were about to overwhelm him. For one moment he forgot himself, and looked back. But that was fatal, for the Devil, who was standing at the place now called "The Devil's Bridge", had his eye on him, and, putting his hand in his apron, pulled out the biggest of the stones he had gathered, and flung it with unerring aim at Gunner, burying him beneath the mass. But in doing this he forgot to hold up his apron with the other hand, and all the other stones tumbled out, and there they lie, strewed in the channel of the Burn to this day. The stone he flung at Gunner forms the Gunnerspool rock, and the pool in front is the pool left by the receding wave of the sea. You may trace the mark of the Devil's smutty fingers where he had taken hold of the rock to throw it at Gunner. Some people will tell you this smutty mark is only a black lichen which grows upon limestone rocks, but it is merely botanists who say so – and they are often of a sceptical turn".

Black Bogey Hole

The “Black Bogey Hole” to which Miss Burdon refers does not appear on any map of the Dene. “Black Bull’s Hole” is marked however, and is possibly the same place, and here is her father’s account of how the name originated:-

“A worthy farmer, living at Shotton, attended Stockton Market to sell stock, and it was known he would be returning and crossing the Dene by the Beeches and Gunnerspool, with the proceeds of his sale in his pocket. Another farmer devised the practical joke of dressing up in a black bull’s hide, horns, and all, lying in wait for his man at the corner to the left, where the yews are the darkest, and first scaring and then possibly, robbing the man. The latter, however, returned home in safety, but from that day to this nothing more has been seen or heard of his proposed assailant; the supposition is – but there are so many, I leave it to my reader’s imagination to fill up the tale ‘to fancy’. I know what I used to think had happened.”

It appears that on at least one occasion the Dene came close to having its own Loch Ness Monster as the following account explains:-

“I Mary C. Burdon, went down to the sea in the car, driven by George Sparks, the groom with Miss. Forbes and Miss. Grace Forbes of Sillwood Park, Berks. As we reached the gate at the bottom of the Dene, Grace

Forbes exclaimed: ‘There’s smoke on the water from a Packet, it’s odd, it is so very low’. I was sitting in front beside George and, taking up my glass, saw in an instant there was no Packet within view. I said in joke, ‘Perhaps it is the sea-serpent’, and, getting out of the car, opened the gate. Soon after, George replied to some question Grace had asked: ‘There’s something on the water’.

“I instantly pointed to him to take the ladies round in the car, and ran as hard as I could to the mud-bank to get a view. One instant’s pause in the middle of it convinced me there was something dark and extraordinary moving on the sea, just opposite the gate. I rushed to the shore and there saw something lying flat along the water, in two distinct lines, thus . — — I said, ‘It must be a whale’, remembering some had lately been seen off Tynemouth; but keeping my glasses steadily fixed on it, the animal rose at one in two large rolls, very close together, and the first nearly twice the size of the other, and darting forward, was lost to sight in a few seconds.”

“No foam whatever was visible about it, but a long dark wavy trunk for about 200 feet behind it. It cut the water as a swallow passes through the air, or with the rapidity of a locomotive. Its motion was direct as an arrow, but also undulating. I should guess it to have been a half or at most three-quarters of a mile at sea, and it was going due North

when we espied it about half to twelve in the a.m. My companion Miss. Grace saw it first, as it passed the Black Rocks. My first view of it was when it was opposite the Dene Gate. The sea was quite smooth at the time and the day bright. It was near low water. The animal looked at first sight  like a wavy line, thus.

(signed)

M. C. Burdon.

Grace Forbes.

Katherine S. Forbes.

*The Cottage, Castle Eden,
September, 24th 1850*

The Easington Hare

A number of authors have retailed the legend of the Easington Hare. The version of it provided in 'Folk Tales of the North Country' by F. Grice, published in 1944, places part of the story very firmly in the Dene.

Once the men of Castle Eden were fond of coursing. They bred and trained their own greyhounds and had rare sport. The carpenter would match his dog against the blacksmith's and the thatcher would challenge the shepherd, and on the first fine holiday they held their coursing matches in the fields around the village. One year, however, they began to be troubled by a strange hare that threatened to spoil their sport. No sooner had they let slip their greyhounds than this strange animal came loping through the

hedge over the furrows. It was not sandy like the other hares, but darker and greyer coloured almost like a mole, and it ran across the path of the hounds as if to say "Course after me. I am not so fleet as my brothers, and you'll soon catch me". It never failed to turn the hounds from their proper game; but no sooner had they turned to give chase than it led them a merry dance, and drew them after it into the depths of Castle Eden Dene. It was in vain for the men to whistle the dogs back. They would not leave the hare; and long after it had eluded them they kept coursing through the Dene, barking madly and running backwards and forwards. Sometimes they ran their heads against the boles of the trees and killed themselves, and sometimes they strayed so far that they were lost. Instead of enjoying a days sport, the men spent many weary hours tramping through thick undergrowth in the Dene, searching for their missing greyhounds.

They soon grew to recognise the mischievous hare, and to wish that they could catch it and put an end to its pranks, for it brought them nothing but inconvenience and loss. It always outstripped the swiftness of their greyhounds and no trap or snare was cunningly enough laid to catch it. Day after day it ruined their coursing matches, until it seemed that soon the men would have to give up altogether.

At last the men held a meeting to discuss what they could do. "When we try to shoot it", said one, "every bullet seems to miss it".

"When we set traps", said another, "we find the traps closed but no hare in them".

"When we course it", said a third, "we only lose another greyhound. What can we do".

They were all at a loss, but at last one proposed that they should seek the advice of an old man who lived near Castle Eden, and was skillful in healing sick horses and cows.

"He may help us", said the man, "for he is more learned than we are in the ways of animals".

So they went to visit the old man. He listened very carefully to their story, and then he said, "This hare has powers that no other hare possesses, and it will not be caught by ordinary means. Tomorrow you must take with you, not a greyhound but a bloodhound. If it is a black bloodhound all the better, and if it has been fed on human milk I think you will be sure of catching your hare".

The men thanked the old horse-doctor and obeyed his instructions. The next day they took with them a coal-black bloodhound, and as soon as the hare appeared they loosed it. Immediately the hare made for the Dene, and the bloodhound followed it. But so slow did the bloodhound seem, that one of the men cried out, "It is no good.

It is like setting a magpie to keep up with a swallow".

Most of the men were of his mind, and when both hare and hound had disappeared into the Dene they tied their horses to the branches and prepared for another weary search. But just when they had given up hope they saw the hare running up the bank at the other side of the ravine, and soon the hound appeared running after it, with its nose to the ground and its big ears flapping as it ran. For once the hare had been hunted out of its refuge in the woods and forced out into open country. The men remounted their horses and crossed the Dene, just in time to see both hare and hound running a bee-line for the village of Easington.

They gave chase, and though the many hedges and gates prevented them from catching up, they drew close enough to see that the hare was limping and the bloodhound was gaining upon it. On they went, past straggling hedges of tall thorn trees and haystacks standing like new-cut loaves on a green cloth, and over pasture and pleated ploughland, until they came to Easington Village.

The hare ran straight across the village green. On the opposite side of the green stood a little stone cottage, with curved brown tiles and a cracked and dirty door.

There was a little space cut away in the bottom of the door, like an opening left for hens to wander

in and out, and through this ran the hare. It was almost too late for just as it bolted through the opening the bloodhound caught up to it, and seized it by one of its hind legs. However, the hare shook its leg free and disappeared into the cottage.

The huntsmen tried to open the door, but it was locked. Then they knocked but no-one came to let them in. So at last they burst in the door, and rushed into the room. But they could see no

hare. Instead they saw, sitting before the fire, an old woman. She was hastily bandaging her heel, and trying in vain to stop the blood from flowing, and to hide a wound.

None of the men spoke to her. Perceiving that the old woman knew that her witchcraft had been found out at last, they turned and left the room; never again was their sport spoiled by the mischievous hare.



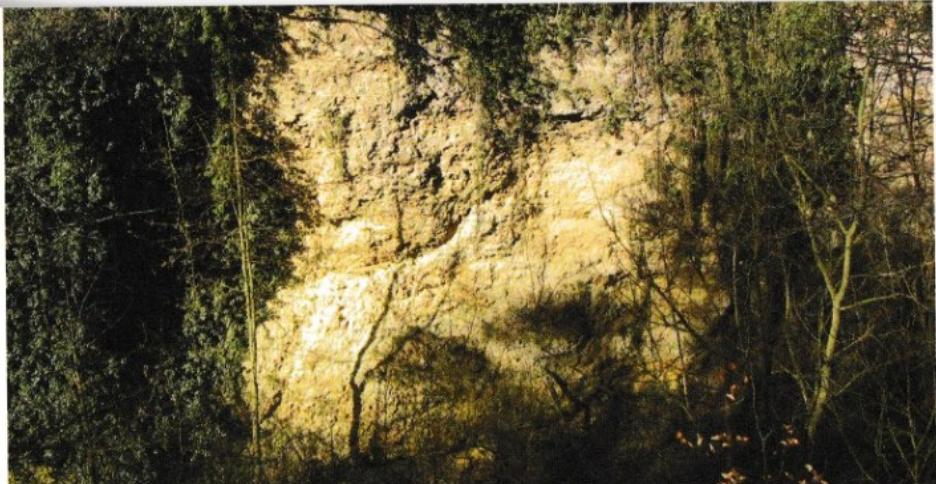
The Easington Hare. Peterlee Development Corporation

Glossary

Place Names

The origins of many of the place names found in the Dene have already been dealt with in preceding pages. This summary aims at explaining, where possible, those not already covered.

The Lodge	Oakerside Dene Lodge, the Reserve office and classroom used by visiting schools.
Jed's Way	A series of six carved stones marking the first mile of a 25 mile circular walk in memory of Jed Traynor.
Old Limekiln	Two limekiln sites are found in the Dene, and one just outside in Limekiln Gill.
Well Wood	A series of wells once in this wood provided water for use in the brewery.
Trossachs	So named because of the area's resemblance to the famous area of that name in Scotland.
Bruce's Ladder	Originally Bruce's Ladder, now often called Jacob's Ladder, this very steep cliff path was named after the De Brus family who once owned the Dene and much of the surrounding area.
Black Bulls Hole	See "Folklore". There may be some connection between this and the inn of the same name in Old Shotton.
Sunny Blunts	No explanation available.
Devils Scar	An area of limestone cliffs which appears to have a long history of instability.
Beech Grove	A stand of beech trees which appears to have been planted about the beginning of the nineteenth century.



Devil's Scar. English Nature

North Blunts	No explanation available.
Seven Chambers	A series of small caves.
Miss Mary's Walk	This path is reputed to have been the favourite walk of Mary Burdon.
Dungy Rock	An overhanging rock, supported now by concrete pillars, which, in providing shelter, has a distant resemblance to dungeon.
White Rock	A large exposure of very pale coloured limestone.
Pegjellima's Cave	A recess in a rock face, and, therefore, a "cave", but there is no information on Pegjellima.
Devil's Lapstone	See "Folklore"
Fall of Biafra	The large rock fall at this site occurred at the same time as the collapse of the rebel state of Biafra in Nigeria in 1970. Often also known as the 'Kissing frogs'.
Craggy Bank	A winding path, once an important link between Hesleden and Horden, which passes a number of limestone outcrops.
Deneholme	The site of a house at Denemouth which at one time served the needs of Victorian visitors to the Dene.

The Flowers of the Dene

Barren strawberry	Common orache	Fat hen
Birds-foot trefoil	Common rockrose	Field forget-me-not
Bird's-nest orchid	Common rush	Field scabious
Bistort	Common sorrel	Field wood-rush
Black medick	Common speedwell	Fragrant orchid
Bladder campion	Common spotted orchid	Goose grass
Bloody cranesbill	Common toadflax	Great willow herb
Bluebell	Common tormentil	Green alkanet
Broad-leaved dock	Common vetch	Ground ivy
Broad-leaved helleborine	Common violet	Hairy St. Johns wort
Brooklime	Cowslip	Hawkweed oxtongue
Burnet rose	Creeping buttercup	Hedge woundwort
Burnet saxifrage	Creeping cinquefoil	Hemp agrimony
Bush vetch	Creeping thistle	Herb Paris
Carline thistle	Crosswort	Herb Robert
Chickweed	Cuckoo flower	Hoary cress
Coltsfoot	Curled dock	Hoary plantain
Columbine	Cut-leaved cranesbill	Hoary ragwort
Comfrey	Dame's violet	Hogweed
Common cat's ear	Dandelion	Honeysuckle
Common centaury	Devil's bit scabious	Horse radish
Common eyebright	Dog rose	Indian balsam
Common hemp-nettle	Dog's mercury	Ivy
Common meadow-buttercup	Early purple orchid	Jacob's ladder
Common milkwort	Enchanters nightshade	Jointed rush
	False oxlip	Knapweed

Knot-grass	Red clover	Valerian
Lady's bedstraw	Red dead-nettle	Wall lettuce
Lady's mantle	Red-veined dock	Water avens
Leopard's bane	Resharrow	Water forget-me-not
Lesser celandine	Ribwort plantain	Welded thistle
Lesser stitchwort	Rosebay willowherb	White campion
Lesser valerian	Salad burnet	White clover
Lily of the valley	Sanicle	White flax
Marjoram	Saw-wort	Wild angelica
Marsh cudweed	Scarlet pimpernel	Wild carrot
Marsh hawk's-beard	Sea plantain	Wild strawberry
Marsh marigold	Sea rocket	Wild thyme
Marsh ragwort	Self-heal	Winter aconite
Marsh thistle	Silverweed	Winter heliotrope
Meadow cranesbill	Smooth hawk's-beard	Wood anemone
Meadow sweet	Sneezewort	Wood avens
Perforate St. Johns wort	Snowdrop	Wood cranesbill
Pignut	Soft rush	Wood forget-me-not
Pineapple weed	Spear thistle	Wood sorrel
Prickly sowthistle	Square-stalked St. John's wort	Woody nightshade
Primrose	Stinging nettle	Yarrow
Ragged robin	Sweet woodruff	Yellow pimpernel
Ragwort	Thyme-leaved speedwell	Zigzag clover
Raspberry	Tufted vetch	
Red bartsia	Twayblade	
Red campion		

The Grasses of the Dene

The Trees and Shrubs of the Dene

Annual meadow grass	Ash	Manna ash
Blue moor grass	Beech	Oak
Cocksfoot	Birch	Pine
Creeping soft grass	Bird cherry	Poplar
Crested dog's-tail	Blackthorn	Privet
Giant fescue	Bridewort	Red elder
Marsh arrow-grass	Common maple	Rhododendron
Meadow fescue	Creeping willow	Rowan
Meadow oat grass	Dark-leaved willow	Sallow
Red fescue	Dogwood	Snowberry
Reed canary grass	Eared willow	Spindle
Rough meadow grass	Elder	Spruce
Rye grass	Gooseberry	Spurge laurel
Scented vernal grass	Gorse	Sweet chestnut
Sheep's fescue	Guelder rose	Sycamore
Tall fescue	Hawthorn	Whitebeam
Timothy grass	Hazel	Wild Cherry
Tufted hair grass	Heather	Wych Elm
Wild barley	Holly	Yew
Woodland meadow grass	Hornbeam	
Yellow oat grass	Horse chestnut	
Yorkshire fog	Larch	
	Lime	

The birds of the Dene

R – regularly seen

O – occasionally seen

S – summer visitor

W – winter visitor

S Arctic tern	Sometimes roosting with other terns on beach at Denemouth.
R Blackbird	Very common breeding resident plus winter visitors.
S Blackcap	Common breeding summer visitor occasionally overwinters.
R Black-headed gull	Seen all year round at Denemouth highest numbers in winter.
R Blue tit	Very common breeding resident.
W Brambling	Variable numbers, occurring most winters.
R Bullfinch	Common breeding resident.
O Buzzard	Seen once or twice per year flying over Dene.
R Carrion crow	Common resident.
R Chaffinch	Common breeding resident.
S Chiffchaff	Very common breeding summer visitor occasionally overwinters.
R Coal tit	Very common breeding resident.
R Collared dove	Common breeding resident along Reserve edges.
R Common gull	Largest numbers in winter at Denemouth.
O Common sandpiper	May turn up at Denemouth on spring and autumn passage.
S Common tern	Sometimes forms roosts on beach at Denemouth.
R Corn bunting	Very uncommon breeding resident.
O Crossbill	Can turn up in large numbers then absent for several months.
S Cuckoo	Breeding summer visitor.

The birds of the Dene *continued*

W Dunlin	Occasionally at Denemouth.
W Fieldfare	Arrives in variable numbers each autumn.
S Garden warbler	Common breeding summer visitor.
R Goldcrest	Common breeding resident and winter visitor.
R Goldfinch	Common in coastal fields.
S Grasshopper warbler.	Uncommon breeder in coastal scrub.
R Great black backed gull	Often on the sea at Denemouth.
R Great spotted woodpecker	Common breeding resident.
R Great tit	Very common breeding resident.
O Green woodpecker	Resident about three pairs.
R Greenfinch	Common breeding resident.
R Grey wagtail	Often seen along Castle Eden Burn.
O Grey heron	Occasional visitor to Newt Pond otherwise seen flying over.
S House martin	Feeds over Dene in summer.
R House sparrow	Declining resident along edge of Reserve.
R Jackdaw	Large numbers roost on Reserve.
R Jay	Common breeding resident.
R Kestrel	Common at Denemouth occasional breeder on Reserve.
O Kingfisher	Occasional along Castle Eden Burn.
O Knot	Seen in winter roosts Denemouth some winters.

● R Lesser black backed gull	Largest numbers Denemouth beach in summer.
● S Lesser whitethroat	Occasional breeder in coastal scrub.
● R Linnet	Resident breeder in coastal scrub.
● O Little tern	Seen more regularly since breeding at Crimdon.
● R Long-tailed tit	Common breeding resident.
● R Magpie	Common breeding resident.
● O Mallard	Seen most years at Newt Pond often breeds.
● R Marsh tit	Probably the best site in Co.Durham for this species.
● O Meadow pipit	Common spring and autumn migrant 1-2 pairs breed.
● R Mistle thrush	Mainly an autumn visitor in variable numbers.
● R Moorhen	Only regular on Newt Pond.
● R Nuthatch	Common breeding resident.
● R Partridge	Breeding resident at the coast.
● R Pheasant	Often encountered on the reserve.
● O Pied flycatcher	Autumn migrant occasional in spring.
● R Pied wagtail	Seen regularly around reserve buildings.
● W Redpoll	Scarce breeding resident.
● W Red-throated diver	Common on the sea at Denemouth.
● W Redshank	Often seen around Denemouth area.
● S Redstart	Occasional spring and autumn passage.
● W Redwing	Regular winter visitor in variable numbers.
● O Reed bunting	A few breed in coastal scrub.

● Ringed plover	Winter visitor occasionally breeds shingle at Denemouth.
● Robin	Common breeding resident and winter visitor.
● Rook	Breed near St. James Church.
● Sand martin	Has bred in stream banks at Denemouth.
● Sanderling	A few each winter at Denemouth.
● Sedge warbler	Spring migrant occasional breeder.
● Short-eared owl	Overwinters on coastal grasslands most years.
● Siskin	May be resident common winter visitor.
● Skylark	Breeds coastal grasslands also autumn migrant.
● Snow bunting	Seen most winters variable numbers at coast.
● Song thrush	Common breeding resident.
● Sparrowhawk	Commonest breeding bird of prey.
● Spotted flycatcher	Very uncommon summer visitor.
● Starling	Breeds most years around reserve buildings.
● Stock dove	Breeding resident.
● Stonechat	Winter visitor Denemouth may breed.
● Swallow	Regularly seen feeding over Reserve summer evenings.
● Swift	Breeds in Peterlee and feeds over Dene.
● Tawny owl	Common breeding resident.
● Treecreeper	Breeding resident.
● Tree pipit	Spring and autumn migrant.

● Turnstone	Can be seen with other waders most winters Denemouth.
● Waxwing	Turns up briefly most years in variable numbers.
● Wheatear	Spring and Autumn migrant at coast.
● Whinchat	Spring and especially autumn migrant at coast.
● Whitethroat	Common breeder in scrub.
● Willow warbler	Very common breeding summer visitor.
● Wood pigeon	Extremely common breeding resident.
● Wood warbler	Rare breeding visitor.
● Woodcock	Resident and winter visitor.
● Wren	Very common breeding resident.
● Yellow wagtail	Spring and autumn passage visitor.
● Yellowhammer	Still found in variable numbers in coastal scrub.

ID Guide

Spring Flowers

Woodlands provide shelter and relative warmth in the early part of the year encouraging the spring flowers to all compete for the great light race flowering before trees put on their leaves and cast nearly total shade to the woodland floor.



① Early purple orchid

Flower colour variable, April June. Earliest orchid to flower in our area, it has a very musky scent of foxes.



② Wood anemone

Flowering period March to May. Also known as windflower and tears of Venus, the flowers follow the sun to gain maximum light. The plant only produces pollen so does not attract many insects.



③ Coltsfoot

Flowers February to April. A very useful medicinal plant. The flowers appear long before its leaves, which, it is, claimed speed up the healing of wounds and skin diseases.



④ Bugle

Flowering April to June in damp woods and grassland a useful flower for early insects producing pollen and nectar.

⑤ Opposite leaved golden saxifrage

Flowers March to July. A plant of shady damp places generally by streamsides where there's less competition.



6 Violets

Flowering Time March to May. Unscented shade tolerant plants of woodlands and grasslands. Four species inhabit the Dene. *Photograph shows hairy violet.*



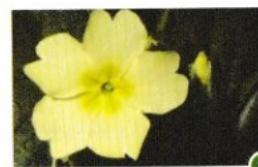
7 Lady's smock

Flowers April to June. A useful flower for insects, its second name is cuckooflower, Froth balls can be noticed on the stems this is called cuckoo's spit or devils saliva and is formed by the nymph of the meadow froghopper. This is one of the food plants of the orange tip butterfly; The leaves contain a high concentration of vitamin c.



8 Primrose.

Flowers March to May. One of the first flowers of spring, the name comes from the Latin *prima* rose, first rose. The flower can be crossed with cowslips to form the plant false oxlip.



9 Wild arum

Flowers April May. Also known as cuckoopint, lords and ladies, jack in the pulpit. Most flowers only last a short time because slugs and snails find the plant irresistible, those that do survive produce bright red berries in the autumn.



10 Lesser celandine

Flowers March to May. Known as pilewort because of its medicinal properties, when young the plant is not poisonous, later the leaves develop a bitter taste with the poison protoanemonine.



11 Wood sorrel

Flowers April May. Its flowers can be put to sleep at midday by covering them; the leaves have a peppery taste when chewed but should not be eaten in large quantities as it can cause serious poisoning.



ID Guide

Butterflies

Nineteen species are resident or regularly migrate to this immediate area. The eleven species illustrated are regularly seen in the woodland and coastal strip of Castle Eden Dene National Nature Reserve. Butterflies are our most colourful and noticeable indicators of the health of a given habitat and are carefully monitored on the nature reserve.



1 Wall

Status: Resident medium sized butterfly. **Food plant:** Cocksfoot and bents. **Habitat:** Open grassland, under cliffs where the turf is broken or stony. **Life cycle:** Two generations a year, May/June, July into September.



2 Comma

Status: Resident medium sized woodland butterfly. **Food plant:** Elm and nettles. **Habitat:** Woodland rides and clearings. **Life cycle:** Two generations a year in good seasons.



3 Large white

Status: Resident and migrant large sized butterfly. **Food plant:** Wild and cultivated members of the crucifer family, cabbage and Brussels sprouts. **Habitat:** Any habitat most often seen in parks and gardens where the food plant grows. **Life cycle:** Two generations a year, April and July.



4 Small tortoiseshell

Status: Resident well-known medium sized butterfly generally the first seen in spring. **Food plant:** Nettles. **Habitat:** Can be seen in any habitat at most times of year. **Life cycle:** Two generations a year. June/July and August onwards.



5 Red admiral

Status: Regular strong flying large sized migrant. Some years more numerous than others. **Food plant:** Nettles



Habitat: Any habitat, most often seen late summer nectaring on thistles. **Life cycle:** One or more generations a year, depending on the arrival of the adults.

6 Large skipper

Status: Fast flying small sized resident. Food plant. Cocksfoot.

Habitat: Open grassy unimproved areas

Life cycle: One generation a year, early June.



7 Peacock

Status: Resident large sized butterfly. **Food plant:**

Nettles. **Habitat:** Any habitat, open and sunny where nectar and the food plants are found. **Life cycle:** One generation a year, late July onwards.



8 Meadow brown

Status: Resident very common medium sized butterfly

Food plant: Wide range of grasses, mainly fescues and bents. **Habitat:** Open grassland, woodland rides and clearings, parks and gardens. **Life cycle:** One generation emerging June onwards.



9 Ringlet

Status: Resident common medium sized butterfly.

Flying in dull rainy weather. **Food plant:** Coarse grasses. Cocksfoot and false brome. **Habitat:** Tall grassland mainly in damp situations. Woodland rides and glades. **Life cycle:** One generation a year. End of June onwards.



10 Common blue

Status: Resident small sized butterfly. **Food plant:**

Birds-foot trefoil. **Habitat:** Open sunny grassland where the food plant grows. **Life cycle:** One generation a year in our region, two in the south of the area.



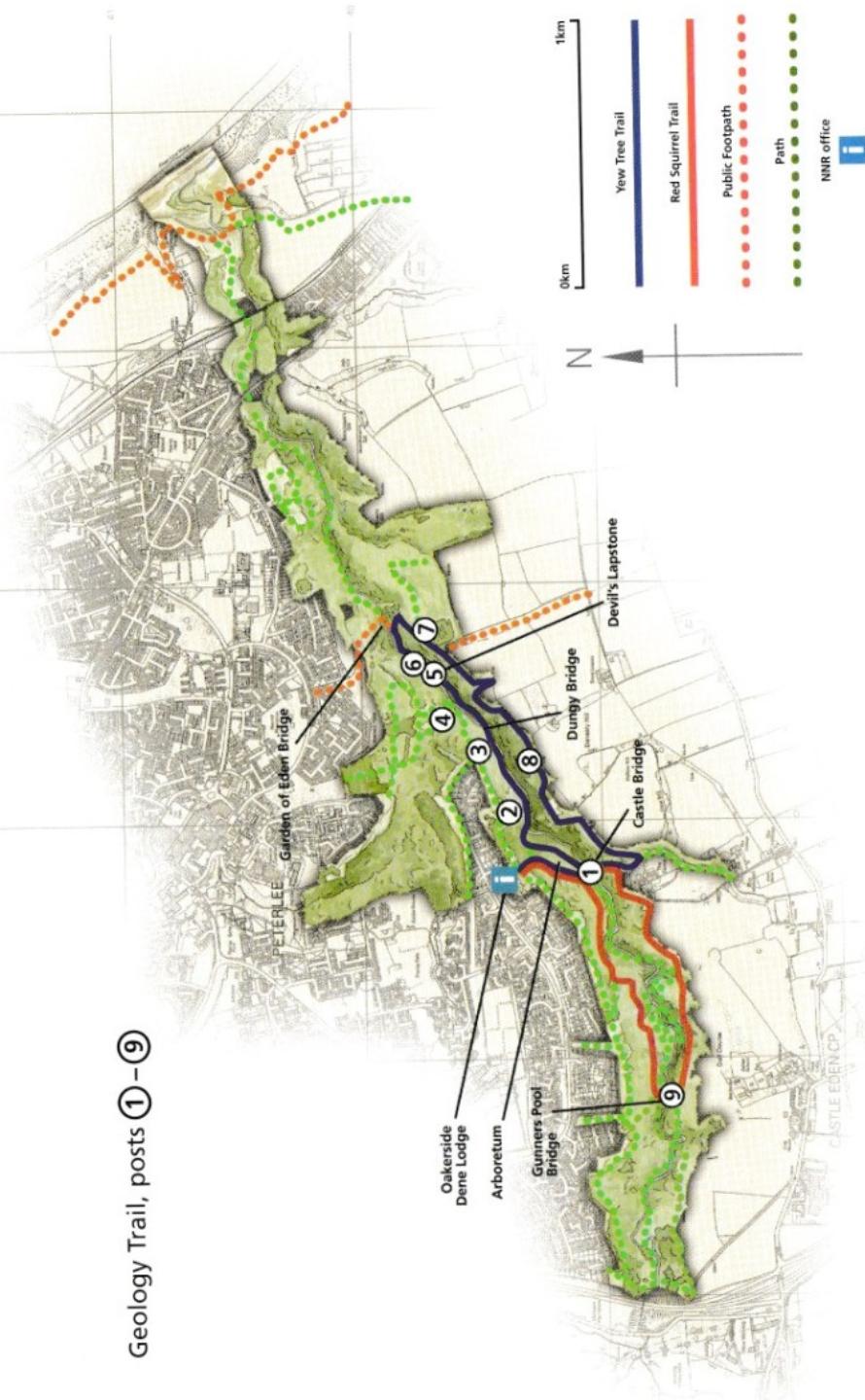
11 Northern brown argus

Status: Resident small sized butterfly on the magnesian limestone area of the county. **Food plant:** Rockrose.

Habitat: Sunny well drained grassland where the food plant grows in abundance. **Life cycle:** One generation a year from early June.

Notes

Geology Trail, posts ①–⑨





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For more information contact:

The English Nature Office at Oakerside Dene Lodge, Stanhope Chase, Peterlee, Co. Durham, SR8 1NJ, Tel: 0191 5860004

English Nature Northumbria Team Tel: 01661 845500

northumbria@english-nature.org.uk
www.english-nature.org.uk

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Print by T. Allom showing the Dene as it was in 1832. English Nature



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